Forest Products Industries' Economic Contributions: New Jersey, 2023

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New Jersey Forest Service
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Prepared by:
Basanta **Lamsal**, PhD
Jagdish **Poudel**, PhD
Raju **Pokharel**, PhD

Department of Forestry
Michigan State University
East Lansing, Michigan, USA

NORTHEAST-MIDWEST STATE FORESTERS ALLIANCE

Department of Forestry
MICHIGAN STATE UNIVERSITY

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Authors

Basanta Lamsal, PhD: Dr. Basanta Lamsal is a Postdoctoral Fellow in the Department of Forestry at Michigan State University. Dr. Lamsal specializes in in the application of input–output economics to the forest sector, forest resource economics, and the auction theory applied to timber markets.

Jagdish Poudel, PhD: Dr. Jagdish Poudel is Forest Economist for the Michigan Department of Natural Resources and an Adjunct Assistant Professor in the Department of Forestry at Michigan State University. Dr. Poudel specializes in traditional forest economics research such as analyzing stumpage demand and supply, timber prices, and forest product utilization, markets, and business. His interests extend to economic analyses of new wood innovations, such as mass timber and woody biomass energy, as well as ecosystem services markets, including habitat conservation and wetland mitigation banking, outdoor recreation and tourism, urban and community forestry, international forestry, and forest carbon markets.

Raju Pokharel, PhD: Dr. Raju Pokharel is an Assistant Professor of Forest Resource Economics in the Department of Forestry at Michigan State University. Dr. Pokharel specializes in evaluating and developing market opportunities for forest products including timber, bioenergy, mass timber, biochar, and others, estimating forest product feedstock supply and market competitions, and assessing the economic trade-off of timber products under different management strategies.

For more information:

Forest Economics and Resource Management Lab (MSU FERM)
URL: https://www.canr.msu.edu/FERM/
Room 208, Natural Resources Building, 480 Wilson Rd,
Department of Forestry, Michigan State University
East Lansing, Michigan 68842

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Foreword

New Jersey's forests are a critical part of our landscape ecologically, socially, and economically. While they are usually recognized for their recreational and environmental value, this report highlights an equally important concept: the meaningful contributions of the forest products industry to the state's economy. The findings in this report show a clear picture of how forestry related businesses support jobs, generate income, and also contribute to local communities. In a state like New Jersey, where forests exist alongside some of the most densely populated areas in the country, the forest products industry also takes an effect. Urban and community forestry is a major part of New Jersey forestry, with tree removals, storm response, and invasive insects and disease species attacking all manner of trees in the Garden State. There is an increasing opportunity to better utilize this large amount of urban wood in the state.

This report, prepared by Michigan State University's Department of Forestry as a part of a multi state effort, offers valuable data and insights to better understand these contributions. It highlights opportunities to support innovation, improve market connections, and sustain the forest products industry into the future. As pressures on land use and natural resources management continue to grow, maintaining a strong and adaptable forest products industry will be essential. Reports such as this help to reinforce the importance of active forest management and thoughtful utilization in ensuring that New Jersey's forests continue to provide benefits for the public for years to come. It is with great pride and excitement that I present you with the Forest Products Industries' Economic Contributions: New Jersey.

Sincerely,

Dominic Cappa

Forester

New Jersey Forest Service

Department of Environmental Protection

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Executive Summary

Based on 2023 FIA estimates, New Jersey contains approximately 1.95 million acres of forest land, representing about 41.5 percent of the state's total land area of 4.70 million acres. Of this forest base, approximately 1.66 million acres (84.9 percent) are classified as timberland, defined as forest land capable of producing commercial volumes of wood. Reserved forestland accounts for 287,182 acres (14.7 percent), while other forestland represents a small share at 7,459 acres (0.4 percent). Non-forest land comprises approximately 2.75 million acres, or 58.5 percent of the state's total land area. Building on this land-use context, this report summarizes the economic contribution of New Jersey's forest products industries using IMPLAN 2023 data and examines changes in industry performance over the pre- and post-COVID period, with emphasis on trends observed over the past five years.

Forest Product Industries

This report analyzes the economic contribution of New Jersey's forest products sector, comprised of 28 individual economic sectors aggregated into seven industry groups: Forestry, Logging, Primary solid wood products, Secondary solid wood products, Wood furniture, Pulp, paper, and paperboard mills, and Secondary paperboard and other paper products. In 2023, these industries directly supported 18,428 jobs and generated $7.13 billion in output, $2.14 billion in value-added, and $1.55 billion in labor income. When indirect supply-chain linkages and induced household-spending effects are included, the sector's total economic footprint reached 37,681 jobs, $11.46 billion in output, $4.78 billion in value added, and $3.11 billion in labor income. The sector exerts a notable multiplier effect (2.04) on the broader economy; for every 100 direct jobs in the forest industry, roughly 104 additional jobs are supported elsewhere in the state.

Leading Forest Products Industry Groups (direct contribution)

Among the seven aggregated groups, Secondary Paperboard and Other Paper Products was the largest direct employer in 2023 (7,420 jobs), driven largely by the state's massive packaging and converting sector. It was followed closely by Wood Furniture (6,449 jobs) and Secondary Solid Wood Products (3,025 jobs). In terms of output, Secondary Paperboard also produced the highest direct output at $4.09 billion, serving as the sector's financial anchor. Wood Furniture generated $1.43 billion, while Secondary Solid Wood Products contributed about $860 million, highlighting the importance of value-added manufacturing. Pulp, Paper, and Paperboard Mills ($296.0 million) and Primary Solid Wood Products ($294.8 million) provided critical upstream contributions. Forestry was the smallest contributor in dollar terms ($21.2 million), while Logging experienced a surge in productivity, generating $146.6 million in direct output with 438 direct jobs.

Leading Individual Forest Products Sectors (direct contribution)

At the disaggregated level (28 sectors), Paperboard Container Manufacturing was the top individual employer with 3,844 jobs. Financial dominance was also concentrated in this sector; Paperboard Container Manufacturing ranked first in Labor Income ($362.8 million), Value-Added ($573.9 million), and Output ($2.30 billion). Paper Bag and Coated and Treated Paper Manufacturing was a consistent top-tier performer, ranking second in Output ($1.23 billion), value-added($573.89 million) and Labor Income ($224.03 million). Wood Kitchen Cabinet and Countertop Manufacturing also emerged as a major driver, ranking second in employment (3,433 jobs) and third in direct output ($663.4 million).

New Jersey's Forest Products Industries Compared to Other New Jersey Industries

In 2023, Forest Product Industry ranked first in output when compared to Mining, Agriculture, and Commercial Fishing. The forest sector's direct output ($7.13 billion) exceeded Mining ($6.19 billion) and was nearly four times larger than Agriculture ($1.87 billion). In terms of employment, the 18,428 jobs supported by the forest industry accounted for roughly 38.5 percent of the state's total natural resources workforce, trailing Agriculture (21,790 jobs) but significantly exceeding Mining (5,764 jobs) and Commercial Fishing (1,847 jobs). Furthermore, within the statewide manufacturing landscape, Forest Products ranked as the sixth-largest employer (17,687 manufacturing jobs), trailing the massive Food and Chemical sectors but outperforming heavy industries such as Machinery and Transportation Equipment.

Seven-years Trends in New Jersey's Forest Products Industries Economic Contribution

From 2017 to 2023, the sector underwent a period of structural realignment. Direct employment decreased slightly by 1.5 percent, while direct output declined by 15.3 percent in real terms. This contraction was primarily driven by consolidations in the large-scale paper converting sectors. However, this trend differed across subsectors. Logging and Primary Solid Wood industries recorded increases in both output and output per worker, showing higher productivity over the period.

Glossary

Forestry Terms

Average annual harvest removals: The estimated volume of trees that were live at the time of the previous inventory and were either cut and removed by direct human activity related to harvesting or died as a result of silvicultural or land-clearing activity by the time of the current inventory.

Average annual mortality: The volume of trees that were live at the time of the previous inventory and are dead in the current inventory.

Average annual net growth: The change in merchantable bole volume of growing-stock trees (at least five inches diameter at breast height [DBH]) after deducting mortality volume, in cubic feet, on forest land.

Forest land: Land that is at least 10 percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and non-forested lands that are at least 10 percent stocked with trees and forest areas adjacent to urban and built-up lands, including pinyon-juniper and chaparral areas in the western U.S., and afforested areas. The minimum area for classification of forest land is one acre and 120 feet wide, measured stem-to-stem from the outermost edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest land if less than 120 feet wide.

Growing stock: Live trees of commercial species that meet minimum merchantability standards (at least five inches DBH). In general, these trees have at least one solid eight-foot section, are reasonably free of form defect on the merchantable bole, and at least 34 percent or more of the volume is merchantable. Excludes rough or rotten cull trees.

Timberland: A subset of forest land that produces or can produce crops of industrial wood and is not withdrawn from timber utilization by statute or administrative regulation. (Note: Areas qualifying as timberland can produce at least 20 cubic feet per acre per year of industrial wood in natural stands. Currently inaccessible and inoperable areas are included.)

Economic Contribution Terms

Direct effects/contributions: The direct contribution represents the economic activities (output, employment, labor income, and value-added) that occur within an industry or sector as a result of its existing production to satisfy current (exogenous) final demand. In contribution analysis, the direct effect corresponds to the sector's own production activities that maintain the structure of the regional economy. For example, the direct contribution of the forest products industry reflects its ongoing production and employment required to meet current local and export demand for forest-based goods.

Employment: The number of full- and part-time jobs associated with an industry.

Indirect effects/contributions: The indirect contribution captures the inter-industry linkages created when the industry purchases goods and services from other local industries. These transactions stimulate additional production, employment, and income along the supply chain. For instance, demand for wood products generates additional output in sectors such as transportation, wholesale trade, and equipment manufacturing that supply inputs to the forest industry. The magnitude of indirect contribution reflects the degree of interdependence and strength of local supply-chain relationships.

Induce effects/contributions: The induced contribution measures the additional economic activity generated by household spending of labor income earned through direct and indirect effects. When workers employed in the forest products and related supply-chain sectors spend their income on goods and services, such as housing, healthcare, or retail, it further stimulates regional economic activity. This household feedback effect represents the cyclical flow of income and expenditures within the economy.

Labor income: The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.

Output: The dollar measure of production within an area; it is also viewed as sales.

Social Accounting Matrix (SAM) multipliers: These multipliers are derived by dividing the sum of direct, indirect, and induced effects by the direct effects. The social accounts include payments made between households, households and government, and more. These are available for output, employment, labor income, and value-added and are used to assess the effects of changes in industry activity (i.e., "ripple effects").

Total effects/contributions: The sum of direct, indirect, and induced effects.

Value-added (also known as gross state product, or GSP): The sum of labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales

taxes). It is the difference between an industry's total output and the cost of its intermediate inputs. The sum of value-added for all economic sectors within the region equals the total GSP.

Introduction

Forest products industries are an integral component of New Jersey's economy. They provide jobs, raw materials, and finished goods that generate additional economic activity throughout the state, region, and nation. Forests in New Jersey have always supported local and state economies and generated employment and income (Leefers 2014, 2015; Poudel, 2022). These forests form the foundation for a wide array of industries, supporting logging, sawmills, pulp and paper, wood products manufacturing, and furniture production. Collectively, the Forest Products Industry (FPI) contributes directly to the economic development of the region, while also supporting rural livelihoods, providing raw materials for construction and packaging, and generating substantial downstream linkages to other industries (Poudel and Dahal 2025; Lamsal et al. 2025a). The scale and diversity of activities across the FPI underscore its role as a major part of the broader manufacturing economy, contributing to value added and sustaining consumer demand (Lamsal et al. 2025b).

A state report on FPI contributions on New Jersey was previously published by Leefers et al. (2020) using 2017 IMPLAN data. The present update extends that effort using 2023 data, allowing for a comparison across time. This analysis measures how the performance of forest sector industries in New Jersey has shifted between 2017 and 2023 in terms of employment, output, labor income, and the Gross State Product (GSP), also known as value added[1]. Tracking these changes is essential, as it provides a clear picture of both long-term trends and the more recent disruptions caused by the COVID-19 pandemic. The pandemic had economy-wide effects on supply chains, consumer demand, and labor markets (Poudel and Dahal 2025; Lamsal et al. 2025b), and this report therefore captures the pre- and post-COVID conditions of the FPI within the region.

This trend analysis can be used in multiple ways by related stakeholders. For policymakers, it offers a benchmark for monitoring the health of one of the region's key resource-based industries and helps inform workforce development, investment, and rural economic policies. For industry stakeholders, it provides insight into productivity, competitiveness, and sectoral resilience, supporting strategic planning. For researchers and forest managers, it offers a consistent regional framework that connects forest resources with industrial performance and economic outcomes.

[1] The 2017 results in this report are based on data from the IMPLAN Pro desktop version, whereas the 2018–2023 results are based on the IMPLAN web platform. Because there are minor differences between the Pro and web versions, the 2017 estimates shown here may not exactly match 2017 results reproduced from the web version. To maintain consistency with the original 2017 report and ensure a valid basis for comparison and trend analysis, we use the original 2017 IMPLAN Pro data, and IMPLAN web data for all years from 2018 through 2023.

The inventory data used in this report were sourced from the U.S. Forest Service Forest Inventory and Analysis (FIA) database and the economic data were obtained from Impact Analysis for Planning (IMPLAN). These data and related information are presented in four major sections: (i) Forest Resources of New Jersey, (ii) Economic Contributions of the New Jersey FPIs, (iii) Comparing FPIs with other industries and neighbor states, and (iv) Summary. We acknowledge that, due to rounding, some values in the tables and figures may not sum to the exact total indicated.

Forest Resources of New Jersey state

According to 2023 estimates from the USDA Forest Inventory and Analysis (FIA) program, New Jersey's total land area is approximately 4.70 million acres. Of this, 1.95 million acres (41.5 percent) meet the FIA definition of forest land, while the remaining 2.75 million acres (58.5 percent) are classified as non-forest land. FIA defines forest land as land at least 10 percent stocked by trees of any size, including areas that formerly supported such tree cover and that will be naturally or artificially regenerated. Within New Jersey's forest land base, timberland accounts for 1.66 million acres, or 84.9 percent (Figure 1), and represents unreserved forest capable of producing at least 20 cubic feet of wood per acre per year. Reserved forestland comprises 287,182 acres (14.7 percent) and is withdrawn from timber utilization by legal or administrative designation. Other forestland totals 7,459 acres (0.4 percent) and consists of unreserved forests of low productivity, generally yielding less than 20 cubic feet per acre per year. In practical terms, approximately 1.66 million acres are available and biophysically suitable for commercial timber management, while about 294,641 acres are either reserved or too low in productivity to contribute materially to timber supply.

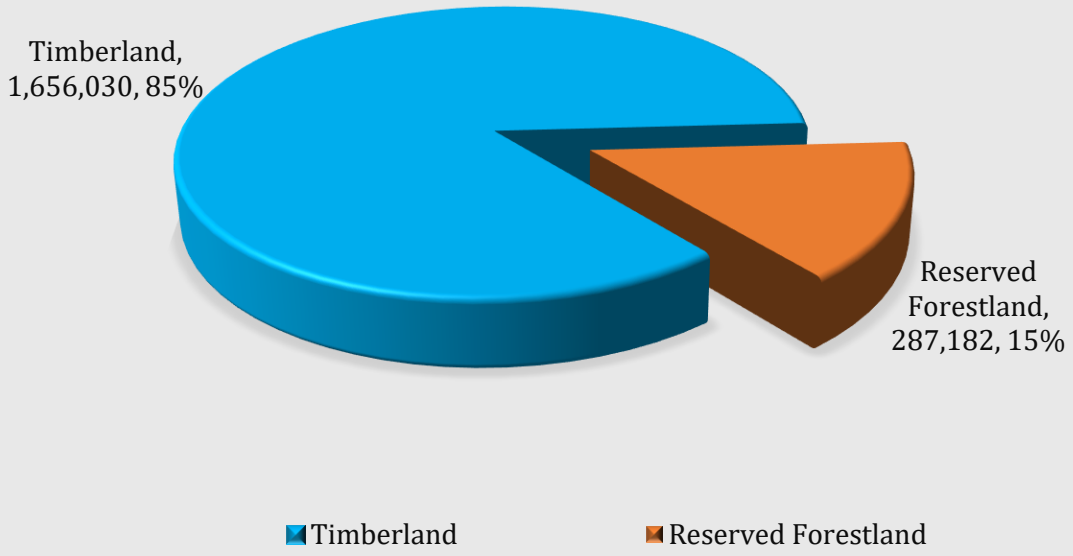


Figure 1: New Jersey Forest Land area in acres by Land use type, 2023 (US Forest Service).

Ownership of New Jersey's 1.95 million acres of forest land is distributed among federal, state and local, and private entities, with State and local government holding the largest share. Private landowners manage 841,767 acres (43.2 percent) of the state's forest land. State and local governments are responsible for 989,498 acres (50.7 percent), while federal ownership totals 119,406 acres (6.1 percent). Within the federal category, National Forest lands are not present, and other federal agencies manage the full 119,406 acres (6.1 percent) (Figure 2).

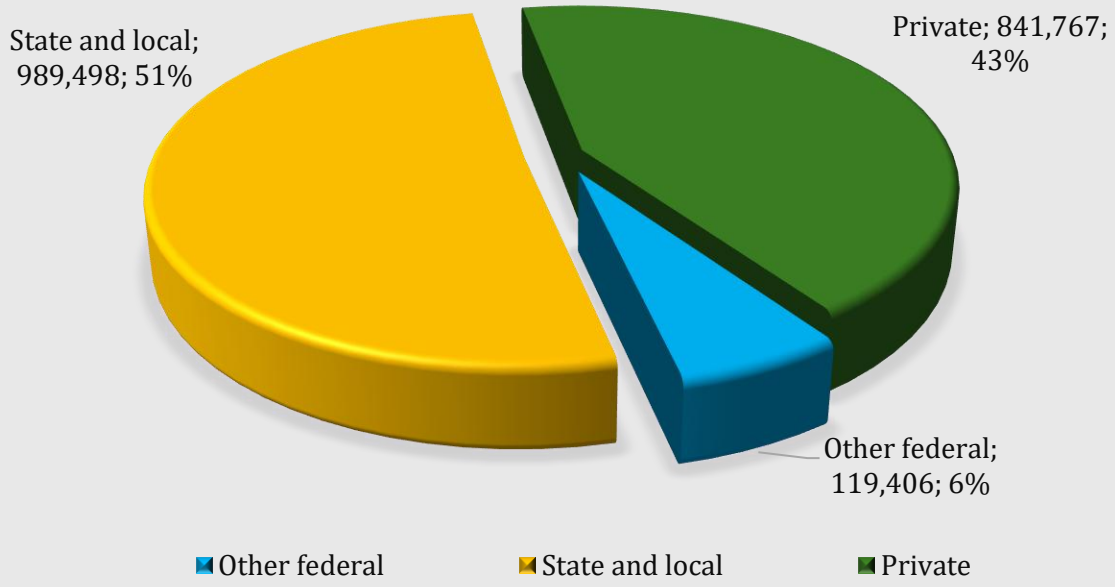


Figure 2: New Jersey Forest Land area in acres by Ownership group, 2023 (US Forest Service).

Hardwoods dominate New Jersey's 1.95 million acres of forest land, although pine and mixed oak–pine types also represent a substantial component of the state's forest base. The oak/hickory forest-type group is the most extensive, occupying 854,993 acres (44 percent) of the total forest area (Figure 3). The loblolly/shortleaf pine group follows with 450,983 acres (23 percent), indicating a sizable conifer-dominated presence. Additional hardwood and mixed-type groups include oak/gum/cypress at 188,358 acres (10 percent), oak/pine at 146,404 acres (8 percent), and maple/beech/birch at 133,543 acres (7 percent). The remaining 176,391 acres (9 percent) are distributed among other forest-type groups. Taken together, the hardwood-associated groups (oak/hickory, oak/gum/cypress, and maple/beech/birch) account for approximately 61 percent of New Jersey's forest land, while the conifer- and mixed conifer–hardwood groups (loblolly/shortleaf pine and oak/pine) comprise about 31 percent, with the balance classified in other types.

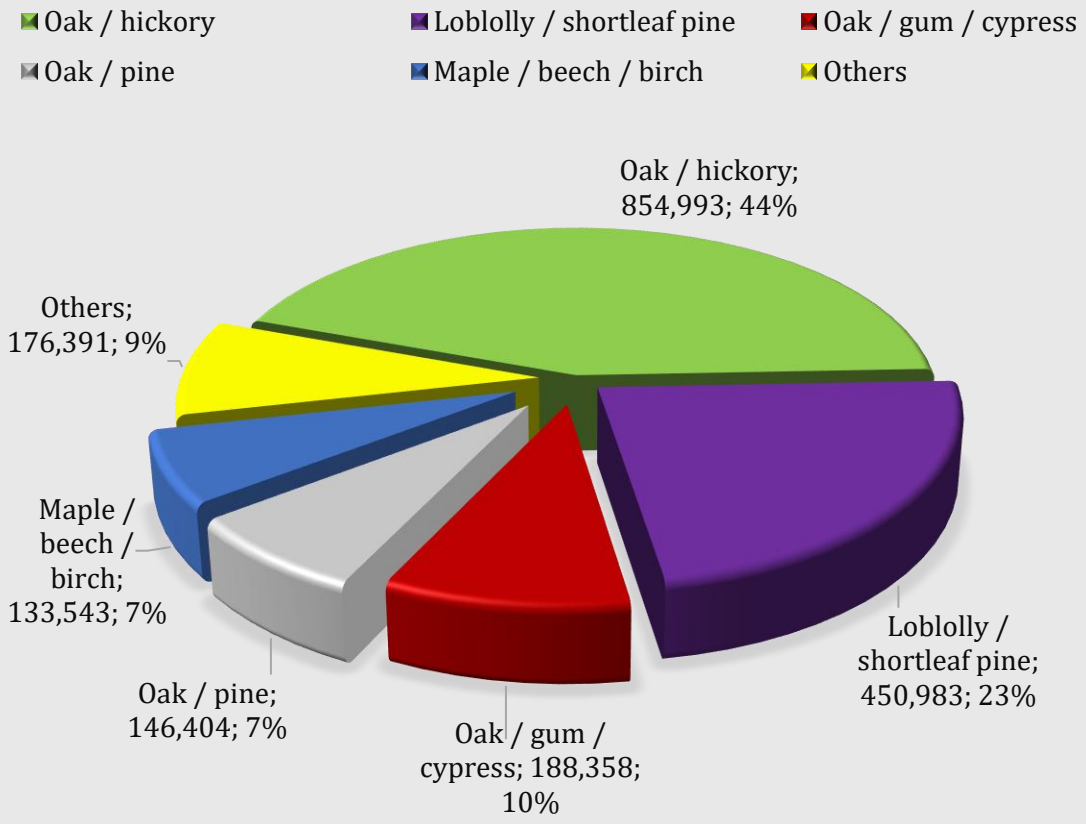


Figure 3*:* New Jersey Forest Land area in acres by Forest type group, 2023 (US Forest Service).

New Jersey's timber resource base supports a range of forest-based activities, including forest management, harvesting, and primary wood-using industries. The estimated volume of standing timber suitable for forest products (i.e., growing-stock volume) totals 7.17 billion cubic feet

statewide (Table 1). Hardwood species account for the majority of the resource, totaling 5.75 billion cubic feet (80.1 percent), while softwoods comprise 1.43 billion cubic feet (19.9 percent). By ownership class, private lands hold 5.21 billion cubic feet (72.6 percent) of total growing-stock volume, followed by state and local government lands with 1.75 billion cubic feet (24.4 percent), and Other federal ownership accounts for 211.3 million cubic feet (2.9 percent).

Average annual net growth of growing stock totals 52.8 million cubic feet per year, compared with 6.0 million cubic feet in average annual harvest removals. Net growth exceeds harvest removals by a ratio of approximately 8.8 to 1, indicating that removals remain very low relative to net biological growth. Because net growth is already net of mortality, the implied annual net change in growing-stock volume is net growth minus harvest removals, or approximately 46.8 million cubic feet per year. This positive balance indicates continued expansion of growing-stock volume at the statewide level. In relative terms, annual harvest removals represent approximately 0.1 percent of standing growing-stock volume. Hardwoods account for a majority of annual activity across key flow measures, including 56.1 percent of net growth and 87.8 percent of harvest removals. The mortality values in Table 1 should be verified before interpretation, as the reported total appears unusually high relative to standing growing-stock volume.

Table 1: Characteristics of Growing Stock in New Jersey, 2023. †

Description	Species group	Other federal	State and local	Private	Not available	**Total**
Net volume	Hardwood	204,686	1,434,503	4,106,622	0	**5,745,811**
	Softwood	6,633	317,409	1,103,799	0	**1,427,841**
	Total	**211,319**	**1,751,912**	**5,210,420**	**0**	**7,173,652**
Average annual net growth	Hardwood	2,958	12,636	13,780	261	**29,635**
	Softwood	1,869	13,933	7,360	0	**23,162**
	Total	**4,827**	**26,569**	**21,140**	**261**	**52,798**
Average annual harvest removals	Hardwood	56	317	4,922	0	**5,296**
	Softwood	0	184	548	0	**732**
	Total	**56**	**502**	**5,470**	**0**	**6,028**
Average annual mortality	Hardwood	182,460	1,428,385	1,619,662	0	**3,230,507**
	Softwood	79,754	710,078	327,687	0	**1,117,519**
	Total	**262,214**	**2,138,463**	**1,947,349**	**0**	**4,348,026**

† All amounts are in thousands of cubic feet.

Note: **Growing stock** is all live trees of commercial species that meet minimum merchantability standards. **Net volume** is net volume in cubic feet of growing stock for timber species, for trees greater than or equal to five inches in diameter, from a one-foot stump to a minimum four-inch top diameter, or to where the central stem breaks into limbs, all of which are less than four inches in diameter. **Net growth** is the average annual net growth of growing stock, in cubic feet, on forest land. **Annual mortality** is the average annual cubic foot mortality of live growing-stock trees (at least four inches DBH), in cubic feet, on forest land. **Harvest removals** are the average annual harvest removals, in cubic feet, of growing stock trees on forest land.

Economic contribution of the Forest Product Industries, 2023

The FPIs in this study are defined as 32 IMPLAN industries that were aggregated into seven analytic groups for consistent reporting across the state. This report follows the same industry grouping framework used in the 2017 report, which was originally developed through consultation with state forestry agencies and other stakeholders and represents a working consensus on what constitutes the regional FPI (Leefers et al. 2020; Poudel and Dahal 2025). The complete list of industries and groupings are presented in Appendix A.

The FPI encompasses a wide range of activities that begin with forest management and timber harvesting and extend through the conversion of raw materials into high-value finished goods. These activities include timber tract operations, nurseries, logging, sawmills, wood preservation, pulp and paper manufacturing, furniture production, and related downstream sectors (Poudel and Dahal 2025). The FPI is a cornerstone of the New Jersey economy, not only providing direct employment in logging, milling, and manufacturing but also supporting a much larger network of indirect and induced jobs in transportation, warehousing, wholesale trade, and retail (Leefers et al. 2020). Its health has far-reaching consequences for rural communities, where it is often one of the few sources of year-round employment, and for regional supply chains that depend on steady flows of wood, fiber, and paper products (Lamsal et al. 2025a).

Measuring these contributions requires more than simply counting jobs, mills, or other establishments. Contribution analysis is essentially a descriptive, ex-post accounting framework that traces how industries interact within a regional economy and support the economy (Lamsal et al. 2025b, Watson et al. 2015). It not only measures the direct transactions tied to a sector, but also the indirect effects in supplier industries and the induced effects from household spending that ripple outward. Economic contribution analysis depends on standardized frameworks that can translate government statistics into regional input–output models. The Bureau of Economic Analysis (BEA) provides the foundation through its Benchmark Input-Output Accounts, which maps the flow of goods and services across industries and establish the structure of GDP by industry (BEA 2023). The Bureau of Labor Statistics (BLS) complements this with the Quarterly Census of Employment and Wages (QCEW) and occupational data, which provide details on employment and payroll. Further, the U.S. Census Bureau adds extra detail with the Economic Census and County Business Patterns, which track establishments, receipts, and industry-level production. IMPLAN harmonizes these data sources into a consistent input-output modeling framework for estimating regional economic contributions (IMPLAN 2023). IMPLAN is widely used in forest-sector economic research to estimate employment, output, labor income, and value-added effects associated with forest-products industries. Several forest-

sector studies have also paired IMPLAN with FIA data to link forest resource conditions with regional economic outcomes, including timber-product output in Ohio (Coronado et al. 2014), domestic hardwood substitution for imported trailer decking in New York (Pokharel et al. 2023), and potential mass timber processing facility development in Michigan (Khanal et al. 2024). IMPLAN also provides a bridge table that is important for defining the forest-products sectors included in this report. The bridge table is useful in both directions: it aggregates NAICS industries into IMPLAN sectors for modeling and identifies the NAICS components represented within each IMPLAN sector. Although this does not by itself constitute a formal sector disaggregation within IMPLAN, it provides the basis for constructing partial-sector estimates when external data are available.

This distinction is particularly important for forest sector analysis because several IMPLAN sectors contain both forestry and non-forestry components (Poudel and Dahal 2025). In this study, the IMPLAN bridge table was used to identify the relevant NAICS-defined activities embedded within broader IMPLAN sectors, and external data were then used to approximate the forest-related share of selected mixed sectors. For example, IMPLAN Sector 10 (All Other Crop Farming) includes a wide variety of agricultural activities such as alfalfa, peanut, and hemp farming, also in addition to maple syrup production. Using USDA maple syrup production data, only the maple syrup portion of Sector 10 was included in the FPI. Similarly, IMPLAN Sector 19 (Support Activities for Agriculture and Forestry) encompasses a broad spectrum of NAICS industries, including soil preparation, crop harvesting, farm labor contracting, and specialized support services for forestry. To avoid overstating the sector, only Support Activities for Forestry were retained in the FPI totals, using BLS employment and establishment data. Thus, the partial-sector estimates reported here reflect analyst-defined allocations based on the IMPLAN bridge table and supplementary data, rather than an automatic sector split performed within IMPLAN. In the 2017 report, several additional sectors were treated as partial sectors, IMPLAN 40 (Electric Power Generation, Biomass), IMPLAN 352 (Institutional Furniture Manufacturing), and IMPLAN 356 (Showcase, Partition, Shelving, and Locker Manufacturing), but in 2023, following stakeholder consensus and due to limited data to isolate wood-based components, these are treated as full sectors; consequently, the 2023 economic contribution estimates for these specific sectors appear higher and are not directly comparable to the 2017 figures. Any comparison between years should therefore be interpreted with caution.

Further, the 2023 analysis implemented the mixed endogenous-exogenous closure using the Output- and Employment -based multipliers formulation approach (Miller and Blair 2022; Lamsal et al. 2025a), whereas the 2017 report used the equivalent matrix-inversion approach. Since these approaches are alternative computational expressions of the same input–output framework and, under the same closure assumptions, these formulations are theoretically equivalent and yield the same multipliers and results.

Note on Data Consistency (2017 vs. 2018–2023): *Readers should interpret the sharp variance between 2017 and 2018 data with caution. The 2017 figures presented in this report are retained from previous studies that used the desktop-based IMPLAN Pro software. Data for 2018 through 2023 were generated using the modernized IMPLAN Cloud (Web) platform, which utilizes updated accounting frameworks and regional purchase coefficients. Although both sets of estimates are based on the same underlying input–output/SAM framework, they are not fully comparable in construction. IMPLAN revised its industry classification structure over time, moving from the 536-industry scheme used for 2013–2017 data years to the 546-industry scheme used for 2018–2022, and later to the 528-industry scheme beginning in 2023. IMPLAN also documents differences in trade-flow and regional purchase coefficient estimation between legacy Pro-era workflows and the current cloud environment. In addition, this report applies updated aggregation and sector-inclusion rules for selected forest-related industries. Accordingly, differences between 2017 and later years may reflect methodological discontinuity in addition to underlying economic change. Comparisons spanning 2017 to 2018 should therefore be interpreted with caution.*

Economic Performance Trends of Forest Product Industry (2017-2023)

Figures 4 and 5 illustrate the economic trajectory and change of New Jersey's Forest Sector over the seven-year study period. As shown in Figure 4, between 2017 and 2023, employment levels remained relatively stable, fluctuating between 17,967 and 19,448 jobs. Total employment declined modestly from 18,702 jobs in 2017 to 18,428 jobs in 2023, a net reduction of 274 jobs, or approximately 1.5%. In contrast, industry output declined more substantially. After increasing from $8.42 billion in 2017 to a peak of $8.98 billion in 2018, output trended downward in subsequent years. By 2023, total output had fallen to $7.13 billion, representing a decline of approximately $1.29 billion, or 15.3%, over the study period.

The combination of relatively stable employment and declining output resulted in a measurable decrease in labor productivity, defined here as output per job. In 2017, average output per worker was approximately $450,000, compared to roughly $387,000 per worker in 2023. This represents a decline of about 14% in output per job over the period. Overall, the data indicate that while the sector maintained its employment base, it experienced a sustained reduction in total output and average output per worker.

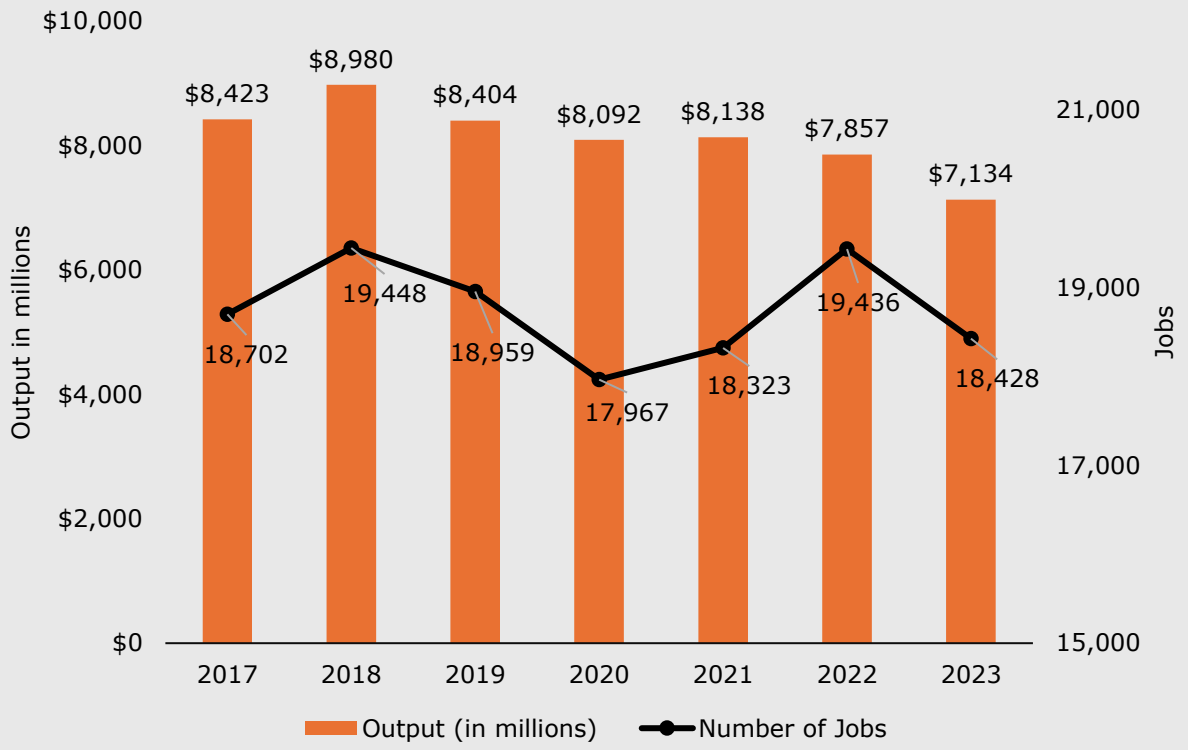
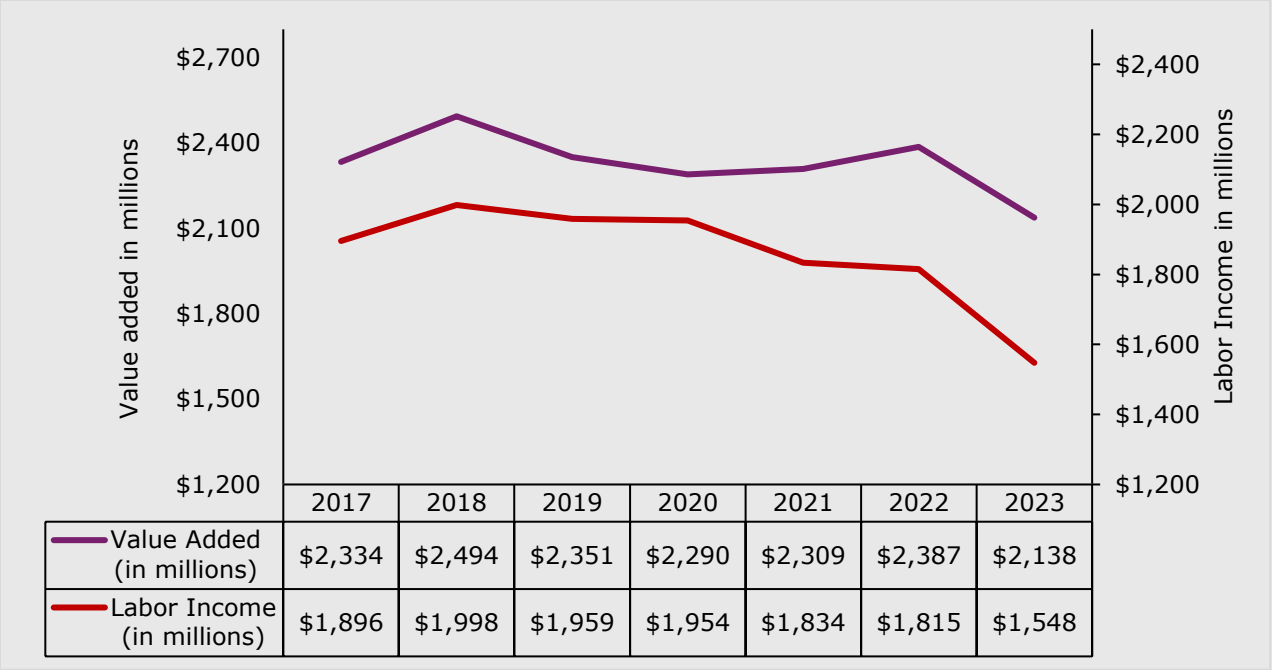


Figure 4: Direct output and employment, 2017–2023, New Jersey state forest products industries.

Figure 5 summarizes changes in value added and labor income for the sector between 2017 and 2023. Over this period, both measures exhibit moderate year-to-year variation, followed by a clearer downward movement toward the end of the study period. Value added increased from $2.33 billion in 2017 to a peak of $2.49 billion in 2018, after which it fluctuated within a relatively narrow range through 2022. By 2023, value added declined to $2.14 billion, representing a net decrease of approximately $196 million, or 8.4%, relative to 2017.

Labor income followed a similar but more pronounced downward trend. After reaching $2.00 billion in 2018, labor income declined steadily over the remainder of the period, falling to $1.55 billion in 2023. This represents a reduction of approximately $348 million, or 18.4%, compared to 2017. When considered alongside relatively stable employment levels (as shown in Figure 4), these trends imply a decline in value added per worker and labor income per worker over the study period. Value added per job decreased from approximately $125,000 per worker in 2017 to about $116,000 per worker in 2023, while labor income per job declined more substantially, from roughly $101,000 per worker to $84,000 per worker. Overall, the data indicate that although the sector maintained much of its employment base, its economic contribution per employee declined between 2017 and 2023, as reflected in both value added and labor income measures.



	2017	2018	2019	2020	2021	2022	2023
Value Added (in millions)	$2,334	$2,494	$2,351	$2,290	$2,309	$2,387	$2,138
Labor Income (in millions)	$1,896	$1,998	$1,959	$1,954	$1,834	$1,815	$1,548

Figure 5: Direct value-added and labor income, 2017–2023, New Jersey state, forest products industries.

Direct and Total Contributions by Forest Product Industry Groups

In 2023, New Jersey's forest products industries directly generated 18,428 jobs, and produced $7.13 billion in gross output, and contributed about $2.14 billion in value-added to the state economy. However, the sector's influence permeates the broader regional economy significantly more than these baseline figures suggest. When accounting for indirect supply-chain demands and induced household spending, the sector's total economic contribution reached 37,681 jobs and $11.46 billion in total output.

Table 2*:* Statewide Economic Contribution of Forest Products Industries, 2023. †

	Employment	Labor Income	Value-added	Output
Direct in 2023	18,428	$1,547,595	$2,137,970	$7,133,531
Compared to 2017	-1.5%	-18.4%	-8.4%	-15.3%
Total in 2023	37,681	$3,107,025	$4,780,556	$11,455,020
Compared to 2017	-10.2%	-20.3%	-12.7%	-16.1%
Multipliers in 2023	2.04	2.01	2.24	1.61

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Comparing these 2023 results with 2017 data shows a notable divergence between the industry's internal labor retention and its external economic impact. While direct employment remained almost stable with only a 1.5% decline, the total employment contribution contracted by 10.2%. This pattern is consistent with a reduction in induced and indirect effects. The 18.4 percent decline in direct labor income likely contributed to lower induced employment, as reduced household income decreases consumer spending within the regional economy. Additional factors, including changes in supply-chain linkages and regional purchasing patterns, may also have influenced the contraction in total employment effects.

The calculated multipliers further emphasize the sector's high-leverage role within the state economy. The Value-Added multiplier of 2.24 is exceptionally strong, indicating that for every dollar of wealth created directly by forest industries, an additional $1.24 is generated in other sectors. Furthermore, the employment multiplier of 2.04 suggests deep labor market integration, implying that every 100 jobs retained in the forest industry supports 104 additional jobs elsewhere in the New Jersey economy.

Table 3 reports the direct economic contributions of the seven industry groups, while Table 4 presents their total contributions including multiplier effects. In 2023, the structure of New Jersey’s forest economy stands in distinct contrast to states dominated by upstream extraction. Here, the sector is heavily weighted toward downstream manufacturing, with Secondary Paperboard and Other Paper Products serving as the primary economic driver. This single industry group employs 7,420 individuals, representing roughly 40% of the sector's direct workforce, and generates over $4.08 billion in output, accounting for 57.3% of the sector's total gross output.

The financial data highlights significant variance in capital intensity and labor productivity across the value chain. For example, while Wood Furniture acts as a major employer (6,449 jobs), it operates with lower capital intensity, generating approximately $221,000 in output per worker. Conversely, the intermediate processing sectors demonstrate much higher efficiency ratios. The Pulp, Paper, and Paperboard Mills sector generated nearly $296 million in output with a lean workforce of only 360 employees, resulting in an output-per-worker ratio exceeding $820,000. Similarly, Primary Solid Wood Products generated nearly equal output ($294.8 million) with a comparable small workforce (437 jobs), indicating that these sub-sectors rely more heavily on high-value processing than on manual labor volume.

When supply-chain and induced effects are included (Table 4), the results underscore the varying depth of inter-industry linkages. While Secondary Paperboard remains the absolute volume leader, supporting nearly 18,000 total jobs and $6.47 billion in output, the Primary Solid Wood Products sector exhibits arguably the strongest relative leverage. The data indicates that for every 100 direct job in Primary Solid Wood Products, roughly 188 additional jobs are

supported elsewhere in the economy (a multiplier of nearly 2.88). This high multiplier suggests that although the direct footprint of New Jersey's sawmills and wood preservation facilities is small, they are deeply integrated into the local economy, likely requiring significant support from local logistics, maintenance, and upstream forestry services. Taken together, the manufacturing-oriented groups (Secondary Paperboard, Wood Furniture, and Secondary Solid Wood) comprise the vast majority of the state's forest economy activity.

Table 3: Direct Economic Contributions in New Jersey state, Industry Groups, 2023. †

Industries	Employment	Labor Income	Value-Added	Output
1.Forestry	299	$18,003	$18,995	$21,173
2.Logging	438	$38,522	$144,791	$146,582
3.Primary Solid Wood Products	437	$37,703	$25,976	$294,812
4.Secondary Solid Wood Products	3,025	$247,553	$234,550	$859,907
5.Wood Furniture	6,449	$499,234	$550,462	$1,427,050
6.Pulp, Paper, and Paperboard mills	360	$34,274	$74,762	$296,008
7.Secondary Paperboard and other Paper Products	7,420	$672,306	$1,088,434	$4,088,000

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Table 4: Total Economic Contributions in New Jersey state, Industry Groups, 2023. †

Industries	Employment	Labor Income	Value- Added	Output
1.Forestry	368	$22,885	$27,840	$34,736
2.Logging	593	$49,203	$163,741	$175,363
3.Primary Solid Wood Products	1,257	$107,388	$148,590	$495,870
4.Secondary Solid Wood Products	5,847	$473,955	$618,631	$1,494,189
5.Wood Furniture	10,961	$858,206	$1,161,624	$2,437,927
6.Pulp, Paper, and Paperboard mills	1,152	$102,795	$191,790	$490,925
7.Secondary Paperboard and other Paper Products	17,933	$1,528,622	$2,538,929	$6,475,184

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Note: *In Table 4, readers may observe that the sum of the economic contributions for the individual industries exceeds the reported total contribution for the Forest Sector as a whole as presented in Table 2. This difference is intentional and results from the "mixed-model" approach used to ensure accuracy.*

In Input-Output (I-O) analysis, simply adding the total contributions of individual sectors results in double-counting. This occurs because the output of one forest industry often serves as an input for another. For example, logs harvested by the Logging sector are inputs for the Furniture sector. If modeled individually and summed, the model counts both the direct value of the logs and the associated supply-chain ripples (indirect effects) twice: once as a production requirement for the Furniture, and again as a direct output of the Logging sector. To provide the most accurate estimate, the aggregated total is calculated by treating the forest industries as a single economic unit. This method mathematically nets out all inter-industry transactions within the sector, ensuring that the final results reflect only the new economic value generated for the state economy.

Forestry

Economic Contribution of Forestry

Table 5 presents the economic contribution of the Forestry sector in New Jersey. For this analysis, the sector comprises two primary industries: (1) forestry, forest products, and timber tract production, which involves the management of forest lands for commercial timber sale; and (2) support activities for forestry. The latter is a diverse category encompassing essential services such as timber cruising, forest fire suppression, pest control, and silvicultural consulting. Notably, maple syrup production is not present in the New Jersey dataset and is therefore excluded from this specific sector analysis.

Table 5: Direct, Indirect, and Induced Economic Contributions of the Forestry Industry in New Jersey, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	299	$18,003	$18,995	$21,173
Indirect	1	$139	$259	$444
Induced	67	$4,744	$8,586	$13,119
Total	**368**	**$22,885**	**$27,840**	**$34,736**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

In 2023, the Forestry sector directly supported 299 jobs and generated nearly $21.2 million in direct output. A technical review of the financial data reveals an exceptionally high labor intensity, even relative to other service-based sectors. Of the $21.2 million in gross output, approximately 85% ($18.0 million) was allocated directly to Labor Income. This ratio indicates that the sector operates with minimal capital overhead or intermediate inputs, with the vast majority of revenue flowing immediately to workforce compensation and proprietor income.

This cost structure creates a distinct pattern in how the sector interacts with the broader state economy, characterized by negligible supply chain impacts but significant household-spending effects:

- **Indirect Effect:** The sector's backward linkages to industrial suppliers are virtually nonexistent. The model identified only 1 indirect job and around $444 thousand in indirect output. This shows that forestry operations in New Jersey require minimal external business inputs (such as heavy equipment, energy, or raw materials) to operate.
- **Induced Effect:** Conversely, the high retention of output as labor income drives a robust induced effect. The spending of income by foresters and consultants supported 67 additional jobs and $13.1 million in output within the local service economy.

When combined, the Forestry sector contributed a total of 368 jobs, $34.7 million in output, and $27.8 million in value-added to the New Jersey economy. The calculated output multiplier of 1.64 is noteworthy; it implies that for every $100 of direct forestry output, an additional $64 is generated in the wider economy, a multiplier driven almost exclusively by the consumption activity of the sector's workforce rather than by industrial interdependence.

Trend Analysis: Forestry (2017–2023)

As illustrated in Figure 6, the Forestry industry in New Jersey (comprising timber tract operations and support activities) has experienced a profound structural contraction over the seven-year study period. New Jersey sector demonstrates a clear downward trajectory in both physical scale and financial magnitude. Between 2017 and 2023, the sector's direct output collapsed by 65.9% (falling from $62.2 million to $21.2 million), while direct employment contracted by 34.9%, shedding 160 jobs to finish the period at 299.

This disparity between the steep drop in output and the more moderate decline in employment signals a significant regression in labor productivity. In 2017, the average output per worker was approximately $135,500, but by 2023 this figure had plummeted to roughly $70,900, a decline of nearly 48%. This shift suggests that the composition of the industry has fundamentally changed. While the sector showed a brief resurgence in 2022 with employment jumping to 442 jobs, this recovery was short-lived. The subsequent sharp decline in 2023 reinforces the long-

term trend of a shrinking forestry footprint in the state, likely driven by land-use changes or a reduction in commercially viable timber tracts.

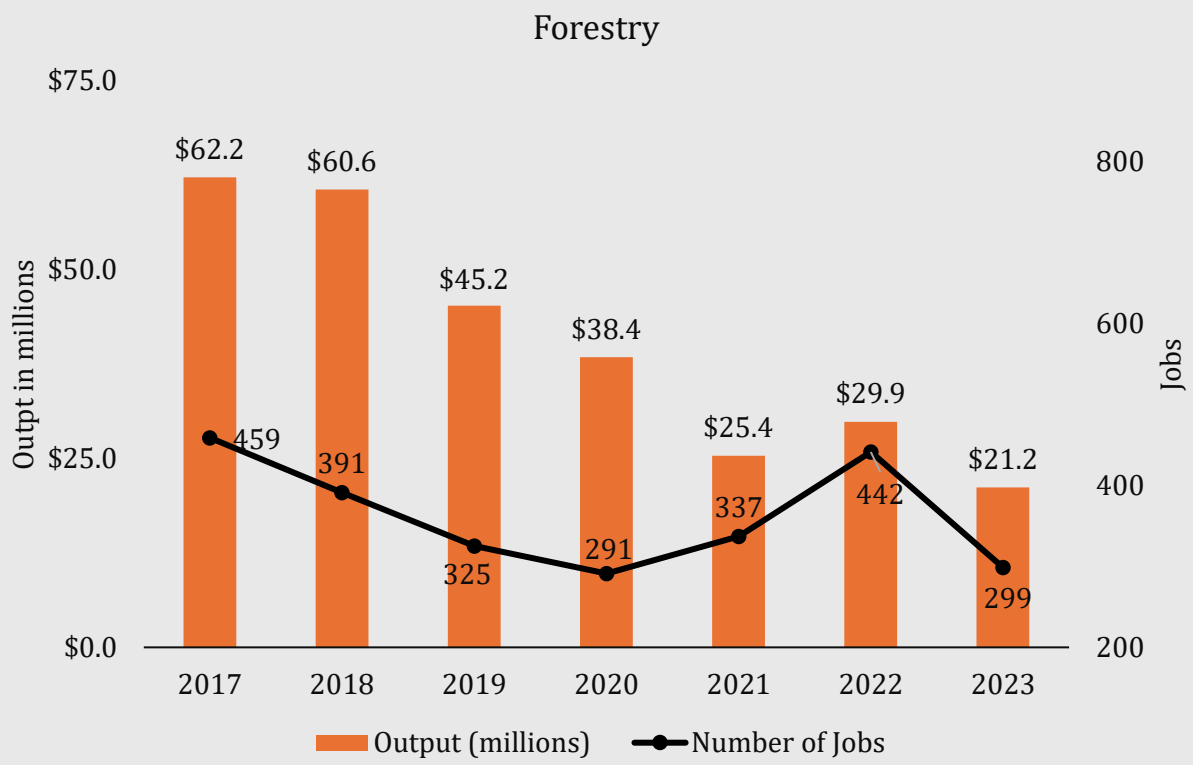


Figure 6: Trend in direct employment and output for the Forestry industry in New Jersey, 2017–2023.

Logging

Economic Contribution of Logging

Table 6 outlines the economic contributions of the Logging sector, which comprises establishments primarily engaged in cutting and transporting timber, producing wood chips in the field, and removing stumps. In 2023, the New Jersey logging sector directly supported 438 jobs and generated $146.6 million in direct industry output. A distinct structural feature of this sector in New Jersey is its exceptionally high conversion of output into GSP. The sector generated $144.8 million in Value-Added, representing an impressive 98.8% of its total output.

The multiplier analysis reveals a sector that is largely self-contained operationally but maintains importance through workforce consumption. The Indirect effects are minimal, generating only $1.1 million in output and supporting just 12 jobs, confirming that logging operations in the state have a very limited requirement for intermediate business supplies or external services. In contrast, the Induced effects were significantly stronger, generating $27.7 million in output and

supporting 142 jobs. This disparity, where induced effects exceed indirect effects by a factor of nearly 26, demonstrates that the sector's integration into the local economy is driven primarily by the household spending of incomes rather than by business-to-business supply chains.

Table 6: Direct, Indirect, and Induced Economic Contributions of the Logging Industry in New Jersey, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	438	$38,522	$144,791	$146,582
Indirect	12	$664	$813	$1,072
Induced	142	$10,016	$18,137	$27,709
Total	**593**	**$49,203**	**$163,741**	**$175,363**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

When combining these direct and induced effects, the Logging industry contributed a total of 593 jobs, $175.4 million in output, and $163.7 million in value-added to the New Jersey economy. The implied Output Multiplier is 1.20. While this multiplier is mathematically lower than in regions with more fragmented supply chains, it reflects the sheer magnitude of the direct output relative to the secondary effects. Essentially, the sector is a highly efficient generator of direct wealth that relies minimally on the broader economy to function yet still supports an additional 35 jobs for every 100 direct jobs created.

Trend Analysis: Logging (2017–2023)

As shown in Figure 7, the Logging industry in New Jersey exhibited moderate stability between 2018 and 2021 before experiencing a dramatic divergence in the final years of the study. After a significant contraction in 2022 where direct employment fell to 283 jobs, the sector rebounded sharply in 2023. In 2023, direct employment rose by 54.8% from 2022 to reach 438 jobs, effectively restoring the workforce to its 2019 peak levels.

The most striking trend, however, is the explosive growth in financial productivity observed in 2023. While employment merely recovered to previous highs, direct output surged to $146.6 million, a 258% increase over the 2022 level of $40.9 million. Analyzing the productivity metrics confirms this structural shift. For most of the study period (2017–2022), the average output per worker fluctuated between $140,000 and $160,000. In 2023, this figure skyrocketed to approximately $334,700 per worker.

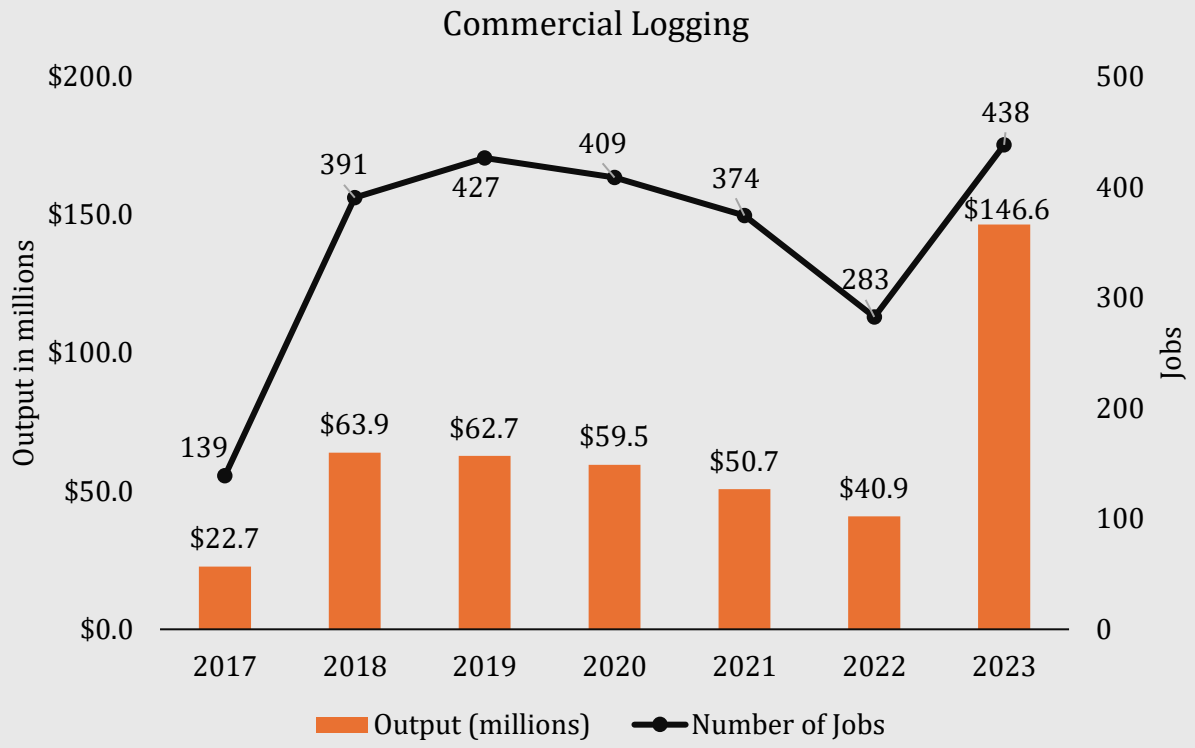


Figure 7: Trend in direct employment and output for the Logging industry in New Jersey, 2017–2023.

Primary Solid Wood Products

Economic Contribution of Primary Solid Wood Products

Table 7 outlines the economic contributions of the Primary Solid Wood Products industry. In New Jersey, this sector comprises electric power generation (biomass), sawmills, wood preservation, veneer and plywood manufacturing, and reconstituted wood product manufacturing. In 2023, this manufacturing group directly provided 437 jobs and generated nearly $295 million in direct output.

Table 7: Direct, Indirect, and Induced Economic Contributions of the Primary Solid Wood Products Industry in New Jersey, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	437	$37,703	$25,976	$294,812
Indirect	514	$48,007	$83,347	$141,075
Induced	307	$21,678	$39,267	$59,984
Total	**1,257**	**$107,388**	**$148,590**	**$495,870**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

A technical analysis of the financial data reveals an exceptionally high degree of capital intensity and processing throughput. The sector generates approximately $674,000 in output per worker, indicating highly mechanized operations. However, the Direct Value-Added is strikingly low ($26.0 million) relative to the gross output ($294.8 million). This ratio suggests that the New Jersey primary wood industry operates with thin margins or high intermediate input costs, likely importing expensive raw materials or timber from outside the immediate region for processing.

Despite the modest direct value-added, the sector functions as a critical economic multiplier through its supply chain. The data indicates that the Primary Solid Wood Products industry possesses the deepest backward linkages of any forest sector in the state. The Indirect Effect supports 514 jobs, a figure that exceeds the sector's own direct workforce (437 jobs). This implies that for every worker inside the sawmill or processing plant, more than one job is sustained in the supporting logistics, maintenance, and energy sectors.

The implied Employment Multiplier of 2.88 (1,257 Total / 437 Direct) confirms this "keystone" status. For every 100 direct jobs in primary manufacturing, 188 additional jobs are supported elsewhere in the New Jersey economy. Even more notable is the Value-Added Multiplier of 5.72, which indicates that while the direct processing facilities capture a small portion of the value, they trigger massive wealth generation ($148.6 million total vs. $26.0 million direct) throughout the wider supply chain.

When aggregating direct, indirect, and induced effects, the Primary Solid Wood Products industry contributed a total of 1,257 jobs, nearly $496 million in output, and $148.6 million in value-added to the state economy in 2023. These figures illustrate that while the direct manufacturing footprint is small, the sector acts as a vital catalyst for broader industrial activity.

Trend Analysis: Primary Solid Wood Products (2017–2023)

As illustrated in Figure 8, the Primary Solid Wood Products industry has demonstrated a robust trajectory of expansion and increasing efficiency throughout the study period. Unlike sectors facing consolidation, this industry has consistently grown in both capacity and financial output. Direct employment increased steadily by 47.1%, rising from 297 jobs in 2017 to 437 jobs in 2023. Simultaneously, real direct output more than doubled, surging by 105.9% from $143.2 million to $294.8 million.

The divergence between the rapid growth in output and the moderate growth in employment highlights a significant gain in labor productivity. In 2017, the sector generated approximately $482,200 in output per worker. By 2023, this metric had risen to nearly $674,600, representing a 40% increase in efficiency. This trend indicates that New Jersey's primary processors are successfully leveraging capital investments, likely through advanced mechanization in milling or energy generation, to drive higher production volumes.

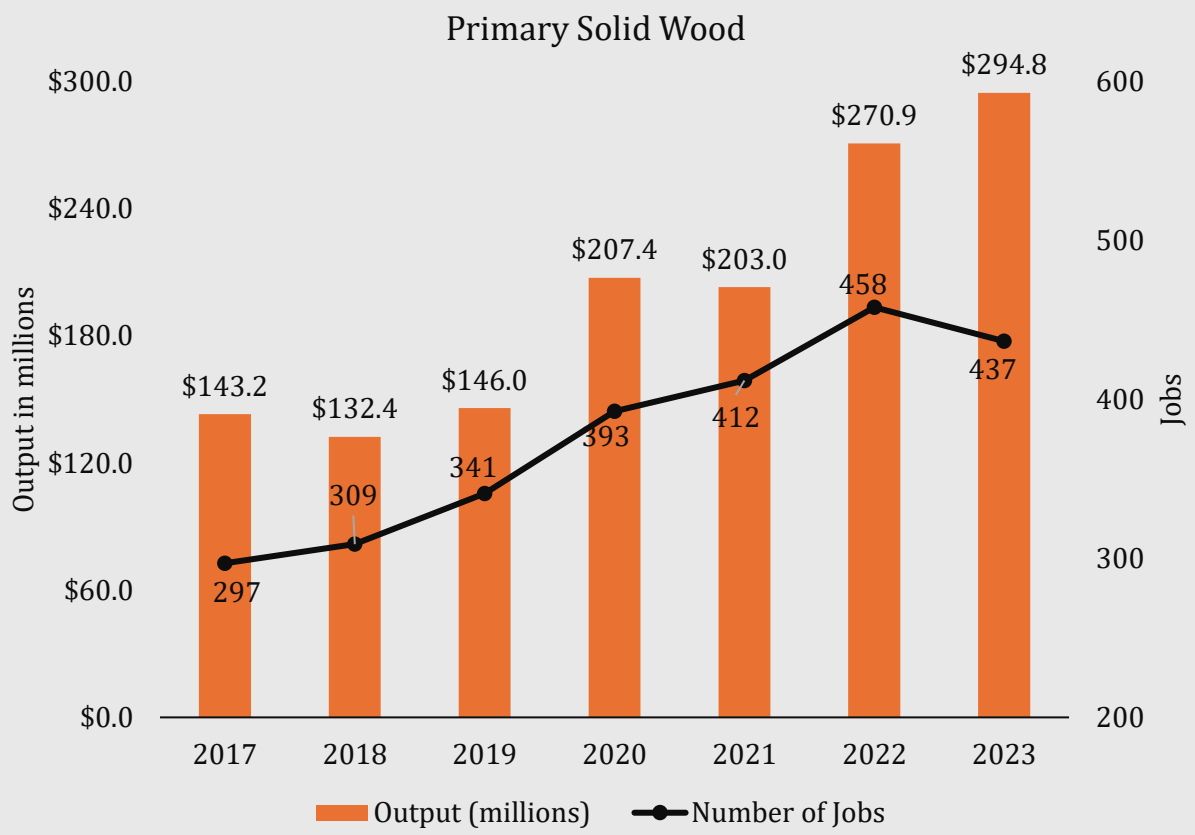


Figure 8: Trend in direct employment and output for the Primary Solid Wood Products industry in New Jersey, 2017–2023.

Secondary Solid Wood Products

Economic Contribution of Secondary Solid Wood Products

Table 8 presents the economic contribution of the Secondary Solid Wood Products industry. This diverse value-added sector encompasses industries such as engineered wood member and truss manufacturing, wood windows and doors manufacturing, millwork and flooring, wood container and pallet manufacturing, prefabricated wood building manufacturing, and miscellaneous wood product manufacturing. In 2023, this sector directly provided 3,025 jobs and generated about $860 million in direct output.

The sector exhibits a robust employment multiplier of 1.93, indicating that for every 100 jobs created in secondary manufacturing, roughly 93 additional jobs are supported elsewhere in the New Jersey economy. While strong, this multiplier is notably lower than that of the Primary Solid Wood sector (2.88). This distinction reflects upstream supply chain dynamics: while Primary manufacturers often integrate with labor-intensive logging and extraction operations, Secondary manufacturers primarily purchase processed lumber from capital-intensive sawmills

or import intermediate wood components. Consequently, the Indirect Employment effect (1,467 jobs) is roughly half the size of the direct workforce, whereas in the Primary sector, the indirect workforce exceeded the direct workforce.

When fully aggregated, the sector supports a total of 5,847 jobs and contributes nearly $1.5 billion in total economic output. Financially, the sector acts as an effective value multiplier, contributing a total of $618.6 million in Value-Added to the state's GSP. A key structural feature of this group is its high retention of value; the ratio of direct Value-Added to Output in this sector (27.3%) is significantly higher than in the Primary sector (8.8%), reflecting the substantial economic lift achieved by transforming rough lumber into high-value finished construction components and specialized wood products.

Table 8: Direct, Indirect, and Induced Economic Contributions of the Secondary Solid Wood Products Industry in New Jersey, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	3,025	$247,553	$234,550	$859,907
Indirect	1,467	$130,793	$210,880	$369,733
Induced	1,355	$95,609	$173,201	$264,548
Total	**5,847**	**$473,955**	**$618,631**	**$1,494,189**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Secondary Solid Wood Products (2017–2023)

As illustrated in Figure 9, the Secondary Solid Wood Products industry has demonstrated a pattern of consistent capacity expansion and strong output growth over the study period. Unlike the upstream sectors that showed volatility, this value-added manufacturing group has maintained a steady upward trajectory in both employment and output contribution.

Direct employment grew by 13.6% over the seven-year period, rising from 2,664 jobs in 2017 to 3,025 jobs in 2023. Real Direct Output experienced even more substantial growth, increasing by 38.6% from $620.2 million to nearly $860 million. A key structural trend is the gain in efficiency. Because the growth in output significantly outpaced the growth in employment, labor productivity has improved. In 2017, the average output per worker was approximately $232,800. By 2023, this figure had increased to roughly $284,300. This 22.1% increase in productivity indicates that manufacturers are achieving greater throughput, allowing them to scale production volumes without a proportional increase in labor costs.

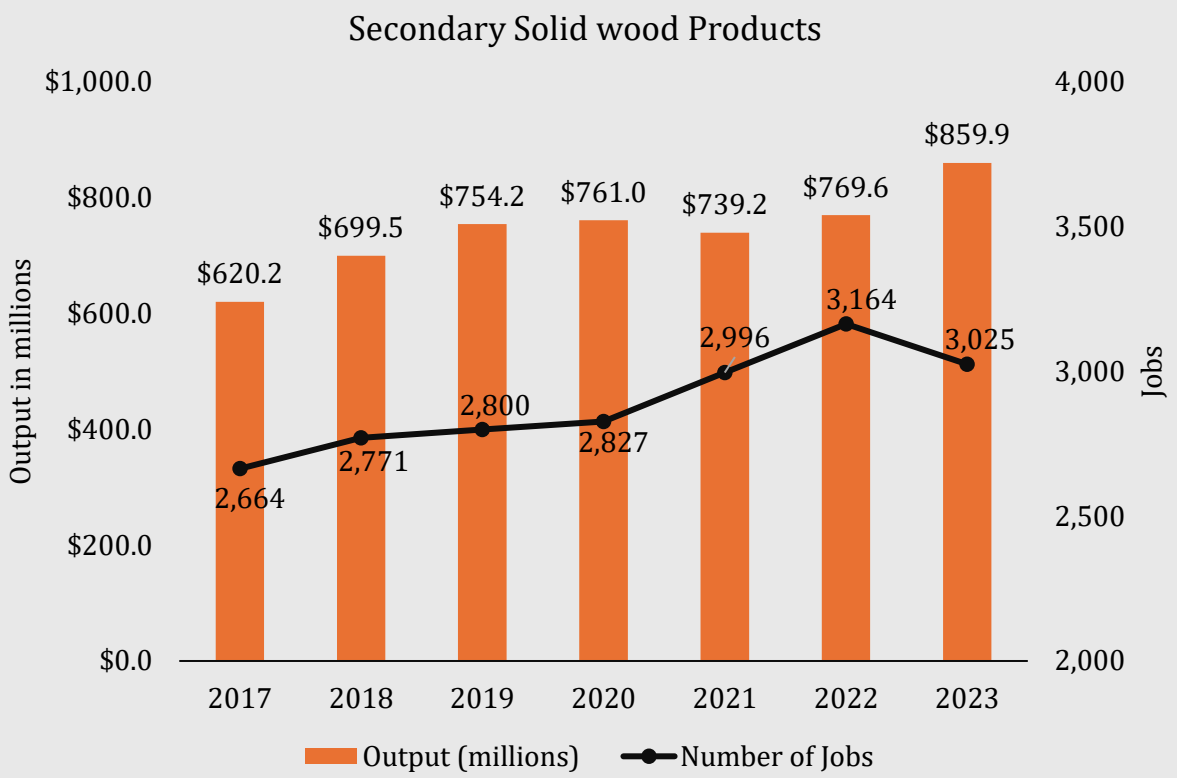


Figure 9: Trend in direct employment and output for the Secondary Solid Wood Products industry in New Jersey, 2017–2023.

Wood Furniture

Economic Contribution of Wood Furniture

Table 9 outlines the economic contributions of the Wood Furniture industry. This group includes manufacturers of wood kitchen cabinets and countertops, upholstered and non-upholstered household furniture, institutional wood furniture, wood office furniture, custom architectural woodwork, and showcase or partition manufacturing. In 2023, this sector served as a major employer within the state, directly supporting 6,449 workers and generating $1.43 billion in direct output.

Table 9: Direct, Indirect, and Induced Economic Contributions of the Wood Furniture Industry in New Jersey, 2023. [†]

	Employment	Labor Income	Value-Added	Output
Direct	6,449	$499,234	$550,462	$1,427,050
Indirect	2,073	$186,816	$299,254	$534,442
Induced	2,439	$172,156	$311,908	$476,435
Total	**10,961**	**$858,206**	**$1,161,624**	**$2,437,927**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

The data highlights that Wood Furniture manufacturing operates with a distinct economic structure compared to the upstream processing sectors. While it generates substantial output, it remains significantly labor-intensive. Approximately 35% of its direct gross output flows directly to workers as Labor Income ($499.2 million out of $1.43 billion). This labor share reflects the semi-custom nature of the industry, particularly in cabinetry and architectural woodwork, where skilled craftsmanship is required alongside automated production to create high-value finished goods.

This labor intensity directly influences the sector's multiplier dynamics. The Employment Multiplier is 1.70, implying that every 100 direct jobs support an additional 70 jobs elsewhere in the state. Consistent with other labor-centric sectors, the Induced Employment effect (2,439 jobs) exceeds the Indirect Employment effect (2,073 jobs). This signals that the sector's primary leverage on the state economy drives from the wages paid to its workforce, who subsequently spend that income in the local service economy, rather than from heavy demands on the industrial supply chain for raw materials.

When fully aggregated, the Wood Furniture industry contributed a total of 10,961 jobs, nearly $2.44 billion in output, and $1.16 billion in value-added to the New Jersey economy in 2023. As a substantial source of value-added manufacturing, this sector plays a crucial role in converting processed timber into high-value consumer and commercial goods, retaining significant wealth within the state.

Trend Analysis: Wood Furniture Industry (2017–2023)

As illustrated in Figure 10, the Wood Furniture industry in New Jersey has demonstrated a strong trajectory of recovery and expansion, effectively erasing the contraction observed during 2020. Over the seven-year period, the sector has solidified its position as a major manufacturing employer, culminating in its highest performance for both jobs and output in 2023.

Direct employment expanded by 26.3% across the study period, growing from 5,106 jobs in 2017 to a peak of 6,449 jobs in 2023. Real Direct Output followed a nearly identical upward path, increasing by 29.7% from $1.10 billion to $1.43 billion. The data highlights a robust post-2020 recovery, where the industry added nearly 1,100 jobs in just three years to meet rising market demand. A productivity analysis reveals that this growth was driven primarily by capacity expansion rather than capital deepening. The output per employee remained relatively stable, increasing marginally by 2.7% from approximately $215,600 in 2017 to $221,300 in 2023.

Figure 10: Trend in direct employment and output for the Wood Furniture industry in New Jersey, 2017–2023.

Pulp, Paper, and Paperboard Mills

Economic Contribution of Pulp, Paper, and Paperboard Mills

Table 10 details the economic contribution of the Pulp, Paper, and Paperboard Mills industry. It is important to interpret these figures within New Jersey's specific industrial context: the sector is comprised of Paper Mills and Paperboard Mills, as Pulp Mills are not present or disclosed within the state's economy. Despite the exclusion of primary pulping operations, this manufacturing group remains the most capital-intensive component of the state's forest economy.

In 2023, these mills generated substantial financial flows despite a relatively small direct workforce. While employing only 360 workers (ranking it as one of the smallest direct employers among the seven groups), the sector generated over $296 million in Direct Output. This divergence between low headcount and high output signals a high-value production; the average output per worker stands at approximately $822,000.

A defining characteristic of this industry is its "inverted" employment profile. The sector serves as an economic anchor where the supply chain workforce exceeds the workforce inside the facility itself. Specifically, the Indirect Employment (498 jobs) is larger than the Direct Employment (360 jobs). This indicates that the mills' operational requirements, massive inputs of energy, maintenance services, logistics, and wholesale materials, sustain a larger external workforce than the mills employ directly. Consequently, the sector exhibits an exceptionally strong Employment Multiplier of 3.20.

When fully aggregated, the sector supports a total of 1,152 jobs and generates nearly $491 million in total economic output. Furthermore, the quality of direct employment in this sector is high. With total labor income of $34.3 million distributed among 360 jobs including proprietor income, the average annual labor income per direct job is approximately $95,200.

Table 10: Direct, Indirect, and Induced Economic Contributions of the Pulp, Paper, and Paperboard Mills Industry in New Jersey, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	360	$34,274	$74,762	$296,008
Indirect	498	$47,716	$79,332	$137,339
Induced	295	$20,804	$37,696	$57,577
Total	**1,152**	**$102,795**	**$191,790**	**$490,925**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Pulp, Paper, and Paperboard Mills (2017–2023)

As illustrated in Figure 11, the Pulp, Paper, and Paperboard Mills industry in New Jersey (excluding pulp mills) exhibits a pattern of volatility characterized by a significant mid-period expansion followed by a subsequent contraction and moderate stabilization. Unlike sectors that followed a linear growth path, this industry experienced its peak activity in 2020 before settling into a new baseline that remains above 2017 levels.

Direct employment grew by 28.1% over the seven-year period, rising from 281 jobs in 2017 to 360 jobs in 2023. Real Direct Output followed a similar but less aggressive trajectory, increasing by 12.3% from $263.5 million to $296.0 million. The data indicates that the sector expanded capacity rapidly between 2017 and 2020, to meet surging demand for paper-based packaging and hygiene products, but faced a correction in 2021 and 2022. A productivity analysis reveals a divergence from the broader manufacturing trend of capital deepening. Because the growth in employment outpaced the growth in output, labor productivity actually declined over the period. In 2017, the sector generated an exceptionally high $937,700 in output per worker. By 2023, this figure had decreased to approximately $822,200, a decline of 12.3%.

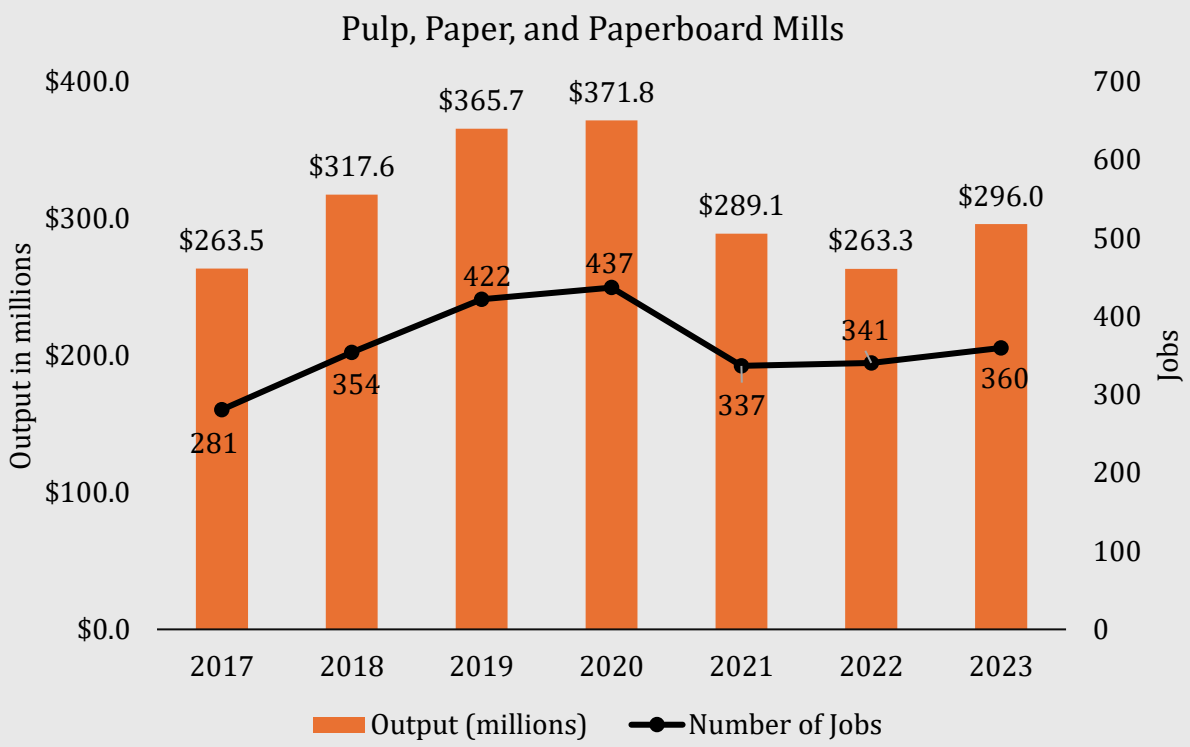


Figure 11: Trend in direct employment and output for the Pulp, Paper, and Paperboard Mills industry in New Jersey, 2017–2023.

Secondary Paperboard and Other Paper Products

Economic Contribution of Secondary Paperboard and Other Paper Products

Table 11 outlines the economic contribution of the Secondary Paperboard and Other Paper Products industry. This extensive group includes manufacturers of paperboard containers, paper bags, coated and treated paper, stationery, sanitary paper products, and other converted paper products. Facilities in this group primarily operate as "converters," manufacturing finished goods from purchased pulp, paperboard, or recycled materials.

Table 11: Direct, Indirect, and Induced Economic Contributions of the Secondary Paperboard and Other Paper Products Industry in New Jersey, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	7,420	$672,306	$1,088,434	$4,088,000
Indirect	6,172	$549,864	$889,305	$1,539,260
Induced	4,341	$306,452	$561,190	$847,923
Total	**17,933**	**$1,528,622**	**$2,538,929**	**$6,475,184**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

In New Jersey, the Secondary Paperboard industry is the dominant economic force within the Forest Sector. In 2023, it stood as the largest direct employer among the seven industry groups, supporting 7,420 jobs and generating nearly $4.09 billion in direct output. This scale reflects New Jersey's strategic position as a logistics and manufacturing hub, where the demand for packaging and consumer paper goods drives massive industrial throughput.

The sector's influence on the broader economy is characterized by deep supply chain integration, evidenced by a robust Employment Multiplier of 2.42. For every 100 jobs within a converting facility, approximately 142 additional jobs are supported throughout the state economy. A significant portion of this leverage comes from the Indirect Effect, which supports 6,172 jobs, a figure nearly rivalling the direct workforce itself. This suggests that New Jersey's converters rely heavily on local supply chains, likely purchasing significant volumes of raw material from the in-state Paper Mills sector and utilizing extensive local transportation and logistics services.

In terms of total contribution, the sector supports a massive 17,933 total jobs and generates $6.48 billion in total economic output. Financially, it serves as a powerhouse of value creation; with a total Value-Added contribution of $2.54 billion, the sector not only provides volume but also generates high-value economic activity, converting intermediate paper inputs into essential packaging and consumer goods that underpin the state's wider retail and shipping economy.

Trend Analysis: Secondary Paperboard and Other Paper Products (2017–2023)

As illustrated in Figure 12, the Secondary Paperboard and Other Paper Products industry, which serves as the largest employer within the state's forest sector, has experienced a continuous and sharp contraction in both scale and financial contribution over the entire study period. The trend indicates a significant structural decline rather than simple cyclical volatility, with the steepest reductions occurring in the final year.

Direct employment contracted substantially by 23.9%, falling from 9,756 jobs in 2017 to 7,420 jobs in 2023. Real Direct Output contracted even more steeply, decreasing by 34.2% from $6.21 billion to $4.09 billion. This sustained downturn suggests that New Jersey's packaging and converting facilities are facing intense pressures, likely from regional competition, market consolidation, or shifts in supply chain logistics that have reduced the volume of throughput in the state.

A critical aspect of this decline is the reduction in efficiency. Because financial output fell at a faster rate than the workforce, the sector experienced a decline in labor productivity. In 2017, the average output per worker was approximately $636,600. By 2023, this figure had dropped to roughly $550,900, representing a 13.5% decrease.

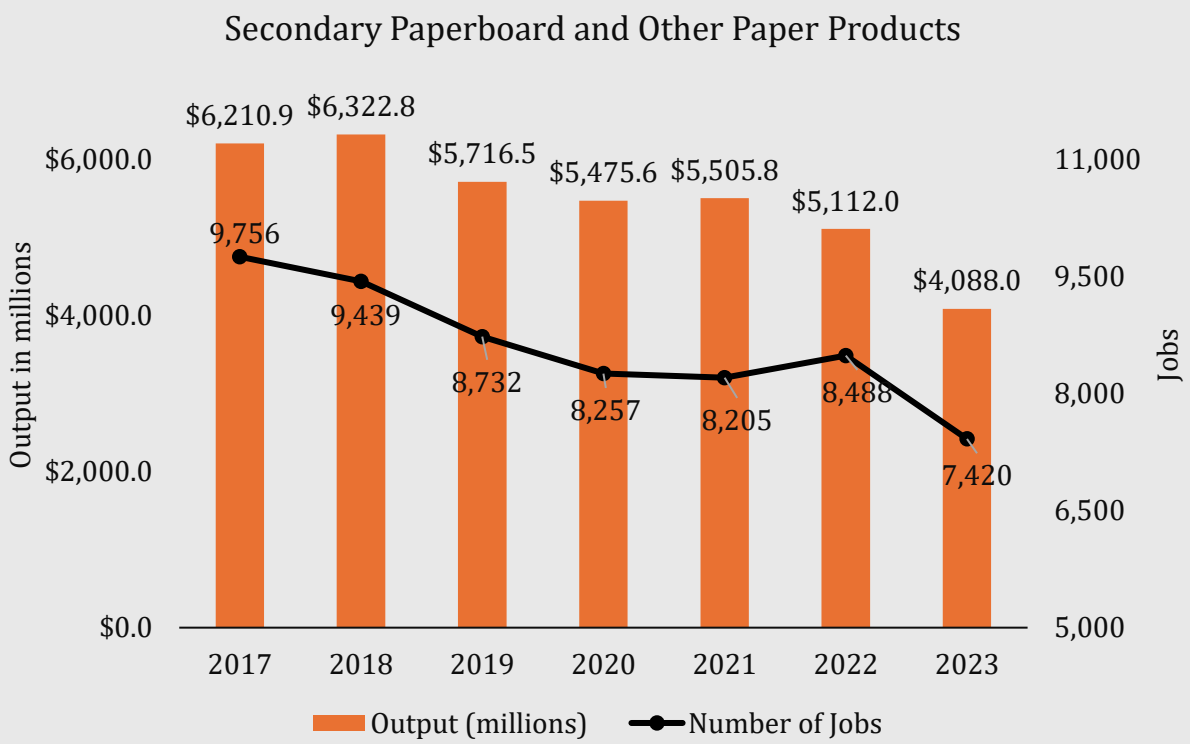


Figure 12: Trend in direct employment and output for the Secondary Paperboard and Other Paper Products industry in New Jersey, 2017–2023.

Top Forest Product Sectors

New Jersey's forest-products sector is represented by 28 IMPLAN industries, as four forest-related sectors, used for the analysis: All other crop farming (Maple syrup production), cut stock and planing, Manufactured home (mobile home) manufacturing, and pulp mills do not appear in the state's 2023 industry mix. Paperboard Container Manufacturing serves as the sector's undisputed economic anchor, ranking first across all four economic metrics. With 3,844 jobs, it accounts for the largest share of direct employment, followed closely by Wood Kitchen Cabinet and Countertop Manufacturing (3,433 jobs). This employment profile highlights a distinct structural characteristic of New Jersey's forest economy, where workforce is heavily concentrated in downstream secondary processing and converting.

In terms of Labor Income, the hierarchy shifts slightly to favor the capital-intensive paper converting sectors. While Wood Kitchen Cabinet Manufacturing ranks second in jobs, it falls to third in Labor Income ($221.8 million). Conversely, Paper Bag and Coated and Treated Paper Manufacturing rises to second place, generating $224.0 million in labor income despite having significantly fewer employees (2,513). Further, economic output is overwhelmingly concentrated in the packaging sector. Paperboard Container Manufacturing generated nearly $2.30 billion in 2023, solidifying its role as the heavyweight of the state's forest economy. Combined with the second-ranked Paper Bag and Coated Paper industry ($1.23 billion), these two "converting" sectors alone drive a massive portion of the state's total forest product sales.

This trend of high-value manufacturing continues in Value-Added, where Paperboard Container Manufacturing contributed $573.9 million to the state's GSP. Notably, Commercial Logging makes a singular appearance in the top five rankings under Value-Added ($144.8 million), placing fifth. Its presence here, despite being absent from the top five in employment or output, indicates that while the logging workforce is smaller, the value generated per unit of production in New Jersey's extraction sector is disproportionately high.

Table 12: Top five industries in terms of direct Economic Contributions in New Jersey state, 2023. †

Rank	Employment	Labor Income	Value added	Output
1	Paperboard container manufacturing (3,844)	Paperboard container manufacturing ($362,802)	Paperboard container manufacturing ($573,887)	Paperboard container manufacturing ($2,300,868)
2	Wood kitchen cabinet and countertop manufacturing (3,433)	Paper bag and coated and treated paper manufacturing ($224,031)	Paper bag and coated and treated paper manufacturing ($368,781)	Paper bag and coated and treated paper manufacturing ($1,232,480)
3	Paper bag and coated and treated paper manufacturing (2,513)	Wood kitchen cabinet and countertop manufacturing ($221,826)	Wood kitchen cabinet and countertop manufacturing ($263,301)	Wood kitchen cabinet and countertop manufacturing ($663,378)
4	Wood windows and door manufacturing (986)	Showcase, partition, shelving, and locker manufacturing ($113,821)	Showcase, partition, shelving, and locker manufacturing ($145,465)	Showcase, partition, shelving, and locker manufacturing ($311,502)
5	Wood container and pallet manufacturing (942)	Wood windows and door manufacturing ($84,681)	Commercial logging ($144,791)	Wood windows and door manufacturing ($281,801)

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Top Non-Forest Industries supported by the Forest Sector in 2023

Excluding the forest-products industries themselves, the New Jersey economy included 468 IMPLAN sectors in 2023. The forest sector exhibited a broad economic footprint, supporting at least one job in 201 distinct industries and at least ten jobs in 131 of those industries. Table 13 highlights the top ten non-forest industries most heavily impacted by this economic activity. Together, these ten sectors account for a substantial 7,005 jobs, which shows the deep integration of the forest industry into the state's wider commercial fabric.

Table 13: Top Ten Industries Impacted by New Jersey state's Forest Products Industries in terms of number of jobs in 2023.

Industries	Number of Jobs
Warehousing and storage	1,416
Other real estate	1,144
Truck transportation	839
Wholesale - Other durable goods merchant wholesalers	653
Employment services	563
Couriers and messengers	517
Wholesale - Other nondurable goods merchant wholesalers	493
Full-service restaurants	480
Hospitals	456
Management of companies and enterprises	445
Total	**7,005**

The composition of these top sectors reveals the specific mechanisms through which the forest sector stimulates the New Jersey economy:

- **Logistics and Industrial Infrastructure:** The strongest economic linkages are found in the storage, movement, and distribution of physical goods. Warehousing and Storage ranks as the largest sector supported by the forest industries, sustaining 1,416 jobs. This prominence is consistent with the state's dominance in paperboard container and packaging manufacturing, which requires extensive warehousing capacity. When combined with Truck Transportation (839 jobs), Couriers and Messengers (517 jobs), and the two Wholesale Trade sectors (combined 1,146 jobs), it becomes clear that the forest sector is one of the primary drivers of New Jersey's logistics infrastructure. These

industries form a cohesive supply chain network essential for moving raw materials to converters and distributing finished packaging and paper goods to national markets.

- **Real Estate and Induced Household Spending:** The high ranking of Other Real Estate (1,144 jobs) serves as a dual indicator. It reflects both the industrial demand for facility space (indirect effects) and the housing activity generated by the workforce (induced effects). Furthermore, the presence of Full-Service Restaurants (480 jobs) and Hospitals (456 jobs) illustrates the power of induced spending. These jobs are supported not by the industrial supply chain, but by the incomes spent by forest-sector employees in their local communities, confirming that the salaries paid in the manufacturing and processing sectors are a vital source of revenue for the local service and healthcare economies.
- **Corporate and Business Support:** Notably, Employment Services (563 jobs) and Management of Companies and Enterprises (445 jobs) appear prominently in the top ten. This shows that New Jersey's forest product firms are significant consumers of corporate support services, relying on external agencies for staffing solutions, administrative oversight, and strategic management. This reliance points to a mature, corporate-structured industry rather than one dominated by small, owner-operated entities.

In terms of economic output, the forest sector's influence shifts heavily toward high-value commercial trade, real estate, and corporate services. As detailed in Table 14, the top ten industries supported by forest-sector activity generated a combined $1.65 billion in output in 2023. This figure highlights the sector's role not just as a producer of goods, but as a massive stimulator of the state's service and logistics economy.

The dominant category involves the wholesale distribution and movement of goods, reflecting the forest industry's reliance on a complex supply chain to move raw materials and finished packaging products. Wholesale - Other Durable Goods and Wholesale - Other Nondurable Goods rank as the top two impacted sectors, generating $236.9 million and $229.4 million, respectively. When combined with Wholesale - Drugs and Druggists' Sundries ($103.0 million), the wholesale trade sector alone accounts for nearly $570 million in supported economic activity. This is further bolstered by Truck Transportation ($192.0 million) and Warehousing and Storage ($139.1 million), confirming that the manufacturing of paperboard and cabinetry drives significant revenue for the state's transportation and storage networks.

The presence of Owner-Occupied Housing as the third-largest sector ($220.7 million) is a critical indicator of the induced economic effect. In economic modeling, this sector represents the imputed rental value of homeownership. Its high ranking confirms that the income earned by the forest sector, particularly in the high-output paper converting industries, sustain high levels of homeownership and household wealth within New Jersey. This is reinforced by the Other Real Estate sector, which contributed an additional $195.2 million, capturing the value of leasing

and property management services stimulated by both industrial operations and workforce spending.

Table 14: Top Ten Industries impacted by New Jersey State's Forest Products Industries in terms of output production in 2023. †

Industries	Output
Wholesale - Other durable goods merchant wholesalers	$236,868
Wholesale - Other nondurable goods merchant wholesalers	$229,388
Owner-occupied housing	$220,700
Other real estate	$195,248
Truck transportation	$192,011
Management of companies and enterprises	$142,962
Warehousing and storage	$139,097
Wholesale - Drugs and druggists' sundries	$103,040
Hospitals	$100,678
Data processing, hosting, and related services	$94,578
Total	**$1,654,569**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

The output rankings also highlight the sector's integration with New Jersey's advanced service economy. Management of Companies and Enterprises generated $143.0 million, reflecting the value of corporate governance and headquarter services utilized by forest product manufacturers. Additionally, Data Processing, Hosting, and Related Services appears in the top ten ($94.6 million), suggesting a reliance on digital infrastructure for inventory management, logistics coordination, or back-office operations. Finally, the sector supports $100.7 million in output for Hospitals, further illustrating the essential spending power of the forest workforce in sustaining local healthcare systems.

Importance of the Forest Products Industries in Context

Natural Resources and Agricultural Industries

To contextualize the economic standing of the forest economy, Table 15 compares the direct contributions of New Jersey's four primary natural resource sectors: Forest Products, Commercial Fishing, Mining/Oil & Gas, and Agricultural Production. The data reveals a distinct hierarchy where Agriculture serves as the primary source of employment, but the industrial power, measured in financial output and value-added, is concentrated in the Forest Products and Mining sectors.

In terms of jobs, Agricultural Production remains the state's largest natural resource employer, supporting 21,790 jobs. The Forest Products industry follows closely as the second-largest employer with 18,428 jobs. Together, these two land-based sectors account for 84.1% of the state's total natural resources workforce. However, the employment trends diverge significantly. While the Forest Products workforce remained relatively stable with a slight decline of 1.5% since 2017, the Agricultural sector experienced a sharper contraction, shedding 16.9% of its workforce over the same period. Meanwhile, the Mining and Commercial Fishing sectors saw substantial employment growth, expanding by 41.6% and 42.7% respectively, though they remain smaller in absolute terms.

When shifting the focus to financial metrics, the Forest Products industry establishes itself as the leader in gross volume. It generated $7.13 billion in Output in 2023, ranking first among the four sectors and significantly outpacing Mining ($6.19 billion) and Agriculture ($1.87 billion). This high output reflects the Forest Sector's strong manufacturing base in packaging and paper conversion, which generates massive output streams compared to raw extraction or farming.

However, the Mining, Oil, and Gas sector demonstrates superior capital intensity. Despite employing fewer than one-third as many workers as the Forest Products industry (5,764 vs 18,428), the Mining sector generated the highest Labor Income ($1.77 billion) and Value-Added ($3.82 billion). This suggests that while Forest Products is the volume leader, Mining operates with a much higher value-per-worker ratio, driven by the extractive nature of the industry and likely higher capitalization.

The trend analysis highlights a period of significant realignment within New Jersey's natural resource base. The Mining sector exhibited explosive financial growth, with Output surging by 133.6% and Value-Added increasing by 70.9% since 2017. In contrast, the Forest Products industry faced a contractionary period, with Labor Income falling by 18.4% and Output declining by 15.3%. Agriculture presents a mixed profile; despite the significant loss of jobs, the sector managed to increase its Labor Income (+5.0%) and Value-Added (+8.8%), referring to a consolidation toward fewer, but more profitable or efficient, operations. Conversely, Commercial Fishing struggled with efficiency; while it added jobs aggressively (+42.7%), its financial returns plummeted, with Output falling by 40.0%.

Table 15: Natural Resources and Agricultural Production Industries in New Jersey state, 2023. †

Industry	Employment	Δ2017††	Labor Income	Δ2017††	Value-Added	Δ2017††	Output	Δ2017††
1. Forest Products	18,428	-1.5%	$1,547,595	-18.4%	$2,137,970	-8.4%	$7,133,531	-15.3%
2. Commercial fishing, hunting & trapping	1,847	42.7%	$87,596	-36.8%	$139,062	-22.3%	$140,178	-40.0%
3. Mining, and oil & gas production	5,764	41.6%	$1,766,986	-19.6%	$3,821,496	70.9%	$6,193,791	133.6%
4. Agriculture production (plant crops and animals)	21,790	-16.9%	$775,210	5.0%	$1,252,192	8.8%	$1,873,855	-3.9%
Total	**47,829**	**-4.9%**	**$4,177,387**	**-15.9%**	**$7,350,720**	**24.6%**	**$15,341,355**	**15.7%**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.
†† All percentage differences are calculated in real terms using 2023 constant dollars.

Manufacturing Industries

To assess the relative standing of the forest sector within New Jersey's industrial base, Table 16 compares "Forest Products Manufacturing" against the state's other major manufacturing groups. Note that in this context, "Forest Products" refers specifically to the manufacturing sub-sectors (Groups 3 through 7), excluding the extraction activities of forestry and logging and other non-manufacturing sectors (IMPLAN codes 10, 15, 16, 19, and 40 see Appendix A). The data reveals that while New Jersey's manufacturing economy is dominated by two massive high-output sectors, the forest sector operates as a critical mid-tier pillar, bridging the gap between niche production and mass industrialization.

In terms of scale, the manufacturing landscape is defined by a "Big Two" dynamic involving the Food and Chemical industries. The Food Manufacturing sector leads in employment (46,652 jobs), while the Chemical Manufacturing sector is the undisputed financial heavyweight, generating over $55.2 billion in output. Amidst these giants, Forest Products Manufacturing secures a significant position. It ranks sixth in employment, supporting 17,687 workers. This places it firmly ahead of well-established heavy industries such as Printing (14,177 jobs), Machinery Manufacturing (13,624 jobs), and Plastics and Rubber Products (13,241 jobs).

Financially, the sector acts as a substantial economic engine, generating nearly $7.0 billion in direct output and contributing $1.97 billion in value-added to the state economy. Notably, the Forest Products sector outperforms several industries often associated with heavy manufacturing. Its output exceeds that of Machinery Manufacturing ($5.68 billion) and is more than double the size of the Transportation Equipment sector ($2.73 billion). This highlights the forest sector's role not just as a materials provider, but as a major source of finished industrial goods.

Further, the Forest Products manufacturing sector generates approximately $393,500 in output per worker ($6.96 billion / 17,687 jobs). While this is lower than the state's average, which is heavily skewed by the hyper-capital-intensive Petroleum and Chemical sectors, it remains highly competitive against its direct manufacturing peers. For instance, Forest Products manufacturing is more productive on a per-worker basis than Fabricated Metal Manufacturing ($348,600 per worker) and Printing ($231,600 per worker). This suggests that New Jersey's paper converters and wood manufacturers maintain a level of capital intensity and efficiency that exceeds the standards of many traditional fabrication sectors.

Table 16: Manufacturing Industries in New Jersey state, 2023. †

Manufacturing Industries	Employment	Labor Income	Value Added	Output
Food	46,652	$3,414,535	$5,220,771	$21,988,521
Chemical	44,163	$10,718,020	$24,756,607	$55,236,902
Computer and Electronic Product	23,385	$3,300,565	$5,232,279	$13,532,507
Fabricated Metal	21,876	$2,129,928	$2,931,689	$7,627,416
Miscellaneous	19,578	$2,687,445	$4,523,639	$8,394,580
Forest Products	17,687	$1,490,223	$1,971,231	$6,960,554
Printing	14,177	$1,103,001	$1,872,702	$3,283,615
Machinery	13,624	$1,486,147	$2,303,815	$5,676,851
Plastics and Rubber Products	13,241	$1,247,891	$1,860,358	$6,024,944
Nonmetallic Mineral Product	10,597	$1,075,756	$1,762,927	$4,304,755
Textiles and Apparel	8,765	$556,502	$607,980	$1,701,826
Electrical Equipment	6,423	$733,254	$1,115,312	$2,973,852
Transportation Equipment	6,039	$582,518	$806,620	$2,727,503
Beverage and Tobacco Product	5,537	$430,053	$940,124	$3,099,147
Primary Metal	3,755	$515,283	$667,583	$4,331,453
Petroleum and Coal	2,637	$912,597	$3,631,607	$12,727,684
Total	**258,138**	**$32,383,718**	**$60,205,243**	**$160,592,109**
Compared to 2017	**1%**	**-6%**	**6%**	**-2%**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Summary

The 2023 economic contribution report shows that the Forest Products sector remains a cornerstone of New Jersey's industrial base and a high-value engine for its economy. In 2023, the Forest Products sector directly employed 18,428 individuals and generated $7.13 billion in direct economic output. The sector's influence extends deeply into the broader state economy, driven by deep integration with the region's massive logistics infrastructure. High employment multipliers in key sectors, such as the 2.42 multiplier in Secondary Paperboard, indicate that the industry serves as a critical leverage point, where direct manufacturing jobs support a vast network of employment in warehousing, transportation, and wholesale trade.

The industry exhibits a distinct structural inversion compared to typical rural forest economies. Rather than being dominated by extraction, New Jersey's sector is overwhelmingly weighted toward downstream manufacturing and "converting." The Paperboard Container and Secondary Paperboard sectors serve as the primary economic drivers, utilizing the state's strategic location to convert raw and recycled materials into high-value packaging and consumer goods. While the upstream Forestry and Logging sectors are smaller in physical scale, they demonstrated remarkable efficiency and value-generation in 2023, operating with high capital intensity.

Within the state's natural resources base, Forest Products stands as a leader in terms of output production. Its $7.13 billion in direct output is higher than Mining, Oil & Gas ($6.19 billion) and Agriculture ($1.87 billion). In the broader manufacturing landscape, the sector functions as a vital mid-tier pillar amidst big industries like Chemical and Food Manufacturing. Ranking as the sixth-largest manufacturing employer (17,687 manufacturing-specific jobs), it outperforms traditional heavy industries such as Machinery and Transportation Equipment, providing essential technical and production employment.

The study period (2017–2023) reveals a sector undergoing a significant realignment. While the massive paper converting sectors faced structural contraction and consolidation, the solid wood and extraction arms, specifically Logging and Primary Solid Wood Products, exhibited robust growth and surging productivity. Ultimately, by anchoring the state's packaging supply chain and expanding its value-added wood processing capacity, the Forest Products sector solidifies its role as an enduring, high-output component of New Jersey's diverse economic identity.

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Appendix A: Forest Products Industries Groupings and IMPLAN Sectors

A1: Forestry Industry Grouping and IMPLAN Sectors

Industry Code	Industry name
10	All other crop farming (Maple Syrup Production)***
15	Forestry, forest products, and timber tract production
19	Support activities for agriculture and forestry*

Note: Sectors with an "*" indicate that only a portion of the sector is included in the forest products industries.
Sectors denoted by "***" indicate that the corresponding FPI is not present in New Jersey.

A2: Logging Industry Grouping and IMPLAN Sector

Industry Code	Industry name
16	Commercial logging

A3: Primary Solid Wood Products Industry Grouping and IMPLAN Sectors

Industry Code	Industry name
40	Electric power generation – Biomass**
124	Sawmills
125	Wood preservation
126	Veneer and plywood manufacturing
128	Reconstituted wood product manufacturing

Note: Sectors with "**" indicate that it is treated as **full sector** in 2023; however in 2017 it was treated as a **partial (wood component only)** so the numbers are not strictly comparable.

A4: Secondary Solid Wood Products Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
127	Engineered wood member and truss manufacturing
129	Wood windows and door manufacturing
130	Cut stock, resawing lumber, and planning***
131	Other millwork, including flooring
132	Wood container and pallet manufacturing
133	Manufactured home (mobile home) manufacturing***
134	Prefabricated wood building manufacturing
135	All other miscellaneous wood product manufacturing

Sectors denoted by "***" indicate that the corresponding FPI is not present in New Jersey.

A5: Wood Furniture Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
348	Wood kitchen cabinet and countertop manufacturing
349	Upholstered household furniture manufacturing
350	Non-upholstered wood household furniture manufacturing
352	Institutional furniture manufacturing**
353	Wood office furniture manufacturing
354	Custom architectural woodwork and millwork
356	Showcase, partition, shelving, and locker manufacturing**

Note: Sectors with "**" indicate that it is treated as **full sector** in 2023; however in 2017 it was treated as a **partial (wood component only)** so the numbers are not strictly comparable.

A6: Pulp, Paper, and Paperboard Mills Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
136	Pulp mills***
137	Paper mills
138	Paperboard mills

Sectors denoted by "***" indicate that the corresponding FPI is not present in New Jersey.

A7: Secondary Paperboard and Other Paper Products Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
139	Paperboard container manufacturing
140	Paper bag and coated and treated paper manufacturing
141	Stationery product manufacturing
142	Sanitary paper product manufacturing
143	All other converted paper product manufacturing

Appendix B. Detailed Economic Contribution Results of 2023

B1: Direct Economic Contribution by IMPLAN Sector, 2023

B1.1: Direct Economic Contributions, Forestry Sector Details, 2023. †

Industries	Employment	Labor Income	Value-Added	Output
All other crop farming	0	$0	$0	$0
Forestry, forest products, and timber tract production	200	$13,296	$14,174	$16,137
Support activities for agriculture and forestry	99	$4,707	$4,821	$5,035
Total	**299**	**$18,003**	**$18,995**	**$21,173**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.2: Direct Economic Contributions, Logging Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Commercial logging	438	$38,522	$144,791	$146,582
Total	**438**	**$38,522**	**$144,791**	**$146,582**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.3: Direct Economic Contributions, Primary Solid Wood Products Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Electric power generation - Biomass	4	$847	$2,953	$5,223
Sawmills	48	$3,758	$3,215	$21,380
Wood preservation	219	$18,645	$11,503	$154,601
Veneer and plywood manufacturing	15	$1,506	$1,106	$4,864
Reconstituted wood product manufacturing	152	$12,947	$7,200	$108,744
Total	**437**	**$37,703**	**$25,976**	**$294,812**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.4: Direct Economic Contributions, Secondary Solid Wood Products Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Engineered wood member and truss manufacturing	376	$33,846	$31,085	$142,475
Wood windows and door manufacturing	986	$84,681	$81,285	$281,801
Cut stock, resawing lumber, and planing	0	$0	$0	$0
Other millwork, including flooring	409	$32,146	$29,278	$117,203
Wood container and pallet manufacturing	942	$72,643	$70,240	$233,207
Manufactured home (mobile home) manufacturing	0	$0	$0	$0
Prefabricated wood building manufacturing	64	$5,237	$4,835	$21,033
All other miscellaneous wood product manufacturing	248	$18,998	$17,828	$64,188
Total	**3,025**	**$247,553**	**$234,550**	**$859,907**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.5: Direct Economic Contributions, Wood Furniture Sector Details (2023, 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Wood kitchen cabinet and countertop manufacturing	3,433	$221,826	$263,301	$663,378
Upholstered household furniture manufacturing	256	$15,422	$18,219	$56,043
Non-upholstered wood household furniture manufacturing	460	$29,502	$33,963	$88,790
Institutional furniture manufacturing	354	$25,980	$30,518	$84,650
Wood office furniture manufacturing	157	$10,778	$14,123	$41,751
Custom architectural woodwork and millwork	866	$81,905	$44,873	$180,936
Showcase, partition, shelving, and locker manufacturing	923	$113,821	$145,465	$311,502
Total	**6,449**	**$499,234**	**$550,462**	**$1,427,050**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.6: Direct Economic Contributions, Pulp, Paper, and Paperboard Mills Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Pulp mills	0	$0	$0	$0
Paper mills	310	$29,529	$64,597	$251,639
Paperboard mills	50	$4,746	$10,166	$44,369
Total	**360**	**$34,274**	**$74,762**	**$296,008**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.7: Direct Economic Contributions, Secondary Paperboard and Other Paper Products Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Paperboard container manufacturing	3,844	$362,802	$573,887	$2,300,868
Paper bag and coated and treated paper manufacturing	2,513	$224,031	$368,781	$1,232,480
Stationery product manufacturing	525	$44,189	$56,320	$231,215
Sanitary paper product manufacturing	223	$20,310	$51,059	$193,275
All other converted paper product manufacturing	316	$20,974	$38,387	$130,162
Total	**7,420**	**$672,306**	**$1,088,434**	**$4,088,000**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B2: Direct Economic Contribution by IMPLAN Sector, 2017 (2017 USD))

B2.1: Direct Economic Contributions, Forestry Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
All other crop farming	333	$35,814	$36,504	$45,223
Forestry, forest products, and timber tract production	126	$4,125	$3,949	$4,431
Support activities for agriculture and forestry	0	$0	$0	$0
Total	**1,250**	**$31,586**	**$28,655**	**$35,685**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B2.2: Direct Economic Contributions, Logging Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Commercial logging	139	$14,701	$15,023	$18,084
Total	**139**	**$14,701**	**$15,023**	**$18,084**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.3: Direct Economic Contributions, Primary Solid Wood Products Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Electric power generation - Biomass	0	$0	$0	$0
Sawmills	79	$4,661	$5,146	$22,612
Wood preservation	71	$2,279	$3,724	$37,439
Veneer and plywood manufacturing	90	$4,485	$5,521	$24,366
Reconstituted wood product manufacturing	56	$4,136	$6,220	$29,823
Total	**297**	**$15,561**	**$20,611**	**$114,241**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.4: Direct Economic Contributions, Secondary Solid Wood Products Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Engineered wood member and truss manufacturing	210	$11,722	$13,299	$47,089
Wood windows and door manufacturing	685	$40,451	$47,097	$154,932
Cut stock, resawing lumber, and planing	0	$0	$0	$0
Other millwork, including flooring	458	$21,140	$25,849	$89,940
Wood container and pallet manufacturing	1,043	$47,676	$52,663	$158,989
Manufactured home (mobile home) manufacturing	0	$0	$0	$0
Prefabricated wood building manufacturing	80	$2,369	$2,581	$11,720
All other miscellaneous wood product manufacturing	187	$8,219	$9,530	$32,178
Total	**2,664**	**$131,576**	**$151,019**	**$494,848**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.5: Direct Economic Contributions, Wood Furniture Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Wood kitchen cabinet and countertop manufacturing	2,759	$156,660	$163,789	$413,111
Upholstered household furniture manufacturing	214	$11,476	$12,104	$41,971
Non-upholstered wood household furniture manufacturing	441	$29,599	$31,882	$65,330
Institutional furniture manufacturing	220	$14,876	$15,754	$43,628
Wood office furniture manufacturing	149	$11,609	$13,436	$34,134
Custom architectural woodwork and millwork	673	$62,966	$66,409	$130,443
Showcase, partition, shelving, and locker manufacturing	650	$56,932	$61,183	$149,625
Total	**5,106**	**$344,118**	**$364,558**	**$878,242**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.6: Direct Economic Contributions, Pulp, Paper, and Paperboard Mills Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Pulp mills	0	$0	$0	$0
Paper mills	240	$26,899	$37,111	$177,323
Paperboard mills	41	$5,313	$6,675	$32,891
Total	**281**	**$32,211**	**$43,785**	**$210,213**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.7: Direct Economic Contributions, Secondary Paperboard and Other Paper Products Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Paperboard container manufacturing	3,950	$313,318	$391,476	$1,821,860
Paper bag and coated and treated paper manufacturing	2,656	$207,825	$248,234	$1,126,902
Stationery product manufacturing	676	$42,538	$50,545	$234,076
Sanitary paper product manufacturing	2,132	$387,720	$560,184	$1,673,373
All other converted paper product manufacturing	342	$21,120	$23,018	$99,386
Total	**9,756**	**$972,521**	**$1,273,457**	**$4,955,597**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B3: Direct Economic Contribution by IMPLAN Sector, 2017 (2023 USD)

B3.1: Direct Economic Contributions, Forestry Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
All other crop farming	333	$43,791	$44,634	$56,679
Forestry, forest products, and timber tract production	126	$5,044	$4,828	$5,554
Support activities for agriculture and forestry	0	$0	$0	$0
Total	**459**	**$48,835**	**$49,462**	**$62,233**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.2: Direct Economic Contributions, Logging Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Commercial logging	139	$17,975	$18,369	$22,665
Total	**139**	**$17,975**	**$18,369**	**$22,665**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.3: Direct Economic Contributions, Primary Solid Wood Products Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Electric power generation - Biomass	0	$0	$0	$0
Sawmills	79	$5,699	$6,292	$28,340
Wood preservation	71	$2,787	$4,553	$46,924
Veneer and plywood manufacturing	90	$5,484	$6,750	$30,538
Reconstituted wood product manufacturing	56	$5,058	$7,605	$37,378
Total	**297**	**$19,027**	**$25,201**	**$143,180**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.4: Direct Economic Contributions, Secondary Solid Wood Products Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Engineered wood member and truss manufacturing	210	$14,332	$16,261	$59,017
Wood windows and door manufacturing	685	$49,460	$57,587	$194,179
Cut stock, resawing lumber, and planing	0	$0	$0	$0
Other millwork, including flooring	458	$25,849	$31,606	$112,724
Wood container and pallet manufacturing	1,043	$58,295	$64,392	$199,264
Manufactured home (mobile home) manufacturing	0	$0	$0	$0
Prefabricated wood building manufacturing	80	$2,896	$3,156	$14,689
All other miscellaneous wood product manufacturing	187	$10,049	$11,653	$40,330
Total	**2,664**	**$160,882**	**$184,656**	**$620,203**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.5: Direct Economic Contributions, Wood Furniture Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Wood kitchen cabinet and countertop manufacturing	2,759	$191,553	$200,270	$517,760
Upholstered household furniture manufacturing	214	$14,031	$14,800	$52,603
Non-upholstered wood household furniture manufacturing	441	$36,192	$38,983	$81,879
Institutional furniture manufacturing	220	$18,190	$19,263	$54,680
Wood office furniture manufacturing	149	$14,195	$16,429	$42,780
Custom architectural woodwork and millwork	673	$76,991	$81,200	$163,487
Showcase, partition, shelving, and locker manufacturing	650	$69,613	$74,811	$187,528
Total	**5,106**	**$420,764**	**$445,756**	**$1,100,718**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.6: Direct Economic Contributions, Pulp, Paper, and Paperboard Mills Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Pulp mills	0	$0	$0	$0
Paper mills	240	$32,890	$45,376	$222,242
Paperboard mills	41	$6,496	$8,161	$41,222
Total	**281**	**$39,386**	**$53,537**	**$263,464**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.7: Direct Economic Contributions, Secondary Paperboard and Other Paper Products Sector Details (2017, in real 2023 Dollars). †

Industries	Employment	Labor Income	Value-Added	Output
Paperboard container manufacturing	3,950	$383,103	$478,670	$2,283,373
Paper bag and coated and treated paper manufacturing	2,656	$254,114	$303,523	$1,412,369
Stationery product manufacturing	676	$52,013	$61,803	$293,372
Sanitary paper product manufacturing	2,132	$474,077	$684,954	$2,097,272
All other converted paper product manufacturing	342	$25,824	$28,145	$124,563
Total	**9,756**	**$1,189,131**	**$1,557,094**	**$6,210,949**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.